Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Pre-Draft Permit; JELD-WEN, Inc.; Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Tue, Sep 17, 2024 at 2:56 PM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>
Cc: Eric Rapp <ERapp@jeldwen.com>

Sarah,

Thank you for taking the time to review the new CAM condition yesterday. As discussed, we expect the limits associated with the biofilter to change following the approval of the pending permit applications (NSR & Title V Min. Modification). All other changes have been reviewed and there are no further comments at this time.

Thank you for processing the permit application timely and addressing our questions.

Randy Taylor, ASP | EHS Manager

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Monday, September 9, 2024 1:12 PM
To: Randy Taylor <rtaylor@jeldwen.com>
Subject: Title V Pre-Draft Permit; JELD-WEN, Inc.; Application No. R30-06700095-2024

[Quoted text hidden]

2 attachments

DPFactSheet R30-06700095-2024.pdf
233K

DPPermit R30-06700095-2024.pdf
607K

West Virginia Secretary of State — Online Data Services

Business and Licensing

Online Data Services Help

Business Organization Detail

NOTICE: The West Virginia Secretary of State's Office makes every reasonable effort to ensure the accuracy of information. However, we make no representation or warranty as to the correctness or completeness of the information. If information is missing from this page, it is not in the The West Virginia Secretary of State's database.

JELD-WEN, INC.

Organization Information

Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
C | Corporation	6/26/1997		6/26/1997	Foreign	Profit			

Organization Information

Business Purpose	3219 - Manufacturing - Wood Product Manufacturing - Other Wood Product Manufacturing (millwork, wood window & door, cut stock, resawing lumber, planing, flooring, wood containers & pallets, prefabricated wood buildings, manufactured & mobile homes)	**Capital Stock**	0.0000
Charter County		**Control Number**	0
Charter State	DE	**Excess Acres**	0
At Will Term		**Member Managed**	
At Will Term Years		**Par Value**	0.000000
Authorized Shares	0	**Young Entrepreneur**	Not Specified

Addresses

Type	Address
Local Office Address	2645 SILVER CRESCENT DRIVE CHARLOTTE, NC, 28273
Mailing Address	2645 SILVER CRESCENT DRIVE CHARLOTTE, NC, 28273 USA
Notice of Process Address	C T CORPORATION SYSTEM 5098 WASHINGTON ST W STE 407 CHARLESTON, WV, 253131561
Principal Office Address	2645 SILVER CRESCENT DRIVE CHARLOTTE, NC, 28273 USA
Type	Address

Officers

Type	Name/Address
Director	WILLIAM CHRISTENSEN 2645 SILVER CRESCENT DRIVE CHARLOTTE, NC, 28273
Director	JAMES S. HAYES 2645 SILVER CRESCENT DRIVE CHARLOTTE, NC, 28273
President	WILLIAM CHRISTENSEN 2645 SILVER CRESCENT DRIVE CHARLOTTE, NC, 28273
Treasurer	FRANCISCO DE BARROS 2645 SILVER CRESCENT DRIVE CHARLOTTE, NC, 28273
Vice-President	FRANCISCO DE BARROS 2645 SILVER CRESCENT DRIVE CHARLOTTE, NC, 28273
Type	Name/Address

DBA

DBA Name	Description	Effective Date	Termination
CARADCO	TRADENAME	9/5/2001	7/10/2006
JELD-WEN	TRADENAME	12/17/2002	

JELD-WEN COATINGS	TRADENAME	6/29/2001	
JELD-WEN FIBER	TRADENAME	9/16/1997	8/10/2001
JELD-WEN FIBER OF WEST VIRGINIA	TRADENAME	6/29/2001	
MILLIKEN MILLWORK	TRADENAME	1/27/2021	
MMI DOOR	TRADENAME	1/27/2021	
NATIONAL DOOR COMPANY	TRADENAME	1/27/2021	
DBA Name	**Description**	**Effective Date**	**Termination Date**

Mergers

Merger Date	Merged	Merged State	Survived	Survived State
1/23/2019	JW 933 CORP.	OR	JELD-WEN, INC.	DE
1/23/2019	JW 934 CORP.	OR	JELD-WEN, INC.	DE
1/23/2019	JW 909 LLC	OR	JELD-WEN, INC.	DE
1/23/2019	JW 932 CORP.	OR	JELD-WEN, INC.	DE
1/8/2021	VPI QUALITY WINDOWS, INC.	MI	JELD-WEN, INC.	DE
1/8/2021	MILLIKEN MILLWORK, INC.	MI	JELD-WEN, INC.	DE
1/8/2021	MILLIKEN ENTERPRISES - OHIO LLC	MI	JELD-WEN, INC.	DE
1/8/2021	MILLIKEN ENTERPRISES - PENNSYLVANIA LLC	MI	JELD-WEN, INC.	DE
1/8/2021	MILLIKEN ENTERPRISES - MICHIGAN LLC	MI	JELD-WEN, INC.	DE
1/8/2021	KARONA, INC.	MI	JELD-WEN, INC.	DE
1/8/2021	AMERICAN BUILDING SUPPLY, INC.	CA	JELD-WEN, INC.	DE
1/8/2021	DOOR BUY, LLC	DE	JELD-WEN, INC.	DE
Merger Date	**Merged**	**Merged State**	**Survived**	**Survived State**

Date	Amendment
1/8/2021	MERGER: MERGING MILLIKEN MILLWORK, INC., A QUALIFIED MI CORPORATION WITH AND INTO JELD-WEN, INC., A QUALIFIED DE CORPORATION, THE SURVIVOR
1/8/2021	MERGER: MERGING VPI QUALITY WINDOWS, INC., A NON-QUALIFIED WA ORGANIZATION, MILLIKEN MILLWORK, INC., A QUALIFIED MI CORPORATION, MILLIKEN ENTERPRISES - OHIO LLC, A NON-QUALIFIED MI ORGANIZATION, MILLIKEN ENTERPRISES - PENNSYLVANIA LLC, A NON-QUALIFIED MI ORGANIZATION, M ENTERPRISES - MICHIGAN LLC, A NON-QUALIFIED MI ORGANI N, KARONA, INC., A NON-QUALIFIED MI ORGANIZATION, AMERICAN BUILDING SUPPLY, INC., A NON-QUALIFIED CA ORGANIZATION, DOOR

	BUY, LLC, A NON-QUALIFIED DE ORGANIZATION WITH AND INTO JELD-WEN, INC., A QUALIFIED DE CORPORATION, THE SURVIVOR
1/8/2021	MERGER: MERGING VPI QUALITY WINDOWS, INC., A NON-QUALIFIED MI ORGANIZATION WITH AND INTO JELD-WEN, INC., A QUALIFIED DE CORPORATION, THE SURVIVOR
1/8/2021	MERGER: MERGING MILLIKEN MILLWORK, INC., A QUALIFIED MI CORPORATION WITH AND INTO JELD-WEN, INC., A QUALIFIED DE CORPORATION, THE SURVIVOR
1/8/2021	MERGER: MERGING MILLIKEN ENTERPRISES - OHIO LLC, A NON-QUALIFIED MI ORGANIZATION WITH AND INTO JELD-WEN, INC., A QUALIFIED DE CORPORATION, THE SURVIVOR
1/8/2021	MERGER: MERGING MILLIKEN ENTERPRISES - PENNSYLVANIA LLC, A NON-QUALIFIED MI ORGANIZATION WITH AND INTO JELD-WEN, INC., A QUALIFIED DE CORPORATION, THE SURVIVOR
1/8/2021	MERGER: MERGING MILLIKEN ENTERPRISES - MICHIGAN LLC, A NON-QUALIFIED MI ORGANIZATION WITH AND INTO JELD-WEN, INC., A QUALIFIED DE CORPORATION, THE SURVIVOR
1/8/2021	MERGER: MERGING KARONA, INC., A NON-QUALIFIED MI ORGANIZATION WITH AND INTO JELD-WEN, INC., A QUALIFIED DE CORPORATION, THE SURVIVOR
1/8/2021	MERGER: MERGING AMERICAN BUILDING SUPPLY, INC., A NON-QUALIFIED CA ORGANIZATION WITH AND INTO JELD-WEN, INC., A QUALIFIED DE CORPORATION, THE SURVIVOR
1/8/2021	MERGER: MERGING DOOR BUY, LLC, A NON-QUALIFIED DE ORGANIZATION WITH AND INTO JELD-WEN, INC., A QUALIFIED DE CORPORATION, THE SURVIVOR
1/23/2019	MERGER: MERGING JW 932 CORP., A NON-QUALIFIED OR ORGANIZATION, JW 909 LLC , A NON-QUALIFIED OR ORGANIZATION, JW 934 CORP., A NON-QUALIFIED OR ORGANIZATION, JW 933 CORP., A NON-QUALIFIED OR ORGANIZATION WITH AND INTO JELD-WEN, INC., A QUALIFIED DE CORPORATION, THE SURVIVOR
8/31/2015	CONVERSION FILED, CHANGING DOMICILED STATE FROM OREGON TO DELAWARE, SEE IMAGE
Date	**Amendment**

Annual Reports

Filed For
2024
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For more information, please contact the Secretary of State's Office at 304-558-8000.

Tuesday, September 17, 2024 — 3:53 PM

UC Defaulted Accounts Search Results

Sorry, no records matching your criteria were found.

FEIN:
Business name: JELD-WEN, INC.
Doing business as/Trading as:

Please use your browsers back button to try again.

WorkforceWV	Unemployment Compensation	Offices of the Insurance Commissioner

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Pre-Draft Permit; JELD-WEN, Inc.; Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Mon, Sep 9, 2024 at 1:12 PM
To: Randy Taylor <rtaylor@jeldwen.com>

Randy,

Attached are the JELD-WEN, Wood Fiber Division's pre-draft permit and fact sheet for you to review.

CAM requirements for the biofilter have been added under Section 5.0. of the operating permit.

Due to my deadline to issue this renewal permit, I need to have everything ready by next week, and the revisions associated with the R13-2192S application will have to be incorporated into a minor modification permit after the renewal permit has been issued. Please let me know if you have any questions or comments about either document as soon as practicable but preferably no later than September 17, 2024.

Thanks,
- Sarah

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Sarah Barron
Engineer Trainee
West Virginia Department of Environmental Protection
Division of Air Quality
(304) 414-1915
sarah.k.barron@wv.gov

2 attachments

DPFactSheet R30-06700095-2024.pdf
233K

DPPermit R30-06700095-2024.pdf
607K

West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

For Draft/Proposed Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-06700095-2024**
Application Received: **November 16, 2023**
Plant Identification Number: **03-54-067-00095**
Permittee: **JELD-WEN, Inc. dba JELD-WEN**
Facility Name: **JELD-WEN, Wood Fiber Division**
Mailing Address: **500 Jeld-Wen Road, Craigsville, WV 26205**

Physical Location:	Craigsville, Nicholas County, West Virginia
UTM Coordinates:	529.8 km Easting • 4,243.8 km Northing • Zone 17
Directions:	From US-19 North of Summersville, take Route 55 East. Approximately 12 miles from Route 19, turn left on Columbia Forest Products Access Road. Stay left on Jeld-Wen Road.

Facility Description

The JELD-WEN, Wood Fiber Division facility manufactures wood fiber door skins in a process similar to the hardboard manufacturing process. Wood chips are mechanically separated into individual fibers at the refiner and dried in a steam and natural gas heated tube dryer. Next, the fiber is blended with a MDI resin and formed into a fiber mat. The mat continues into an unheated pre-compressor, which is followed by a series of saws that cut each mat to size. The mats are then consolidated in a steam-heated press. After the press, the door skins are cut to the final dimensions and are coated with a waterborne primer. In addition to door skin manufacturing, the facility also produces coating products (paints, adhesives, etc.) which are consumed internally and sold externally.

SIC: Primary 2493, Secondary 2851; NAICS: 321219, 325500

Emissions Summary

Plantwide Emissions Summary [Tons per Year]

Regulated Pollutants	Potential Emissions	2023 Actual Emissions
Carbon Monoxide (CO)	92.6	15.15
Nitrogen Oxides (NO_X)	172.8	46.05
Particulate Matter ($PM_{2.5}$)	18.0	11.82
Particulate Matter (PM_{10})	23.0	11.82
Total Particulate Matter (TSP)	39.2	20.58
Sulfur Dioxide (SO_2)	6.6	0.88
Volatile Organic Compounds (VOC)	155.0	72.95

PM_{10} is a component of TSP.

Hazardous Air Pollutants	Potential Emissions	2023 Actual Emissions
Acetaldehyde	0.29	0.16
Acrolein	1.40	0.25
Benzene	1.20	0.13
Carbon Tetrachloride	0.02	0.02
Chlorine	0.21	< 0.01
Dichloromethane	0.08	0.03
Formaldehyde	2.60	1.14
Glycol Ethers	1.10	0.13
Hexane	0.43	0.02
Hydrogen Chloride	4.90	0.02
Lead	0.02	< 0.01
Manganese	0.42	< 0.01
Methanol	1.73	1.38
Methyl Chloroform	0.01	< 0.01
Methyl Methacrylate	0.02	None Reported
MDI	0.01	< 0.01
Naphthalene	0.03	0.02
Nickel	0.01	< 0.01

Hazardous Air Pollutants	Potential Emissions	2023 Actual Emissions
Phenol	0.19	0.15
Propionaldehyde	0.11	0.10
Styrene	0.59	0.05
Tetrachloroethylene	0.01	< 0.01
Toluene	0.24	0.10
Xylene	0.01	< 0.01
Total HAPs	15.65	3.76
Some of the above HAPs may be counted as PM or VOCs.		

Title V Program Applicability Basis

This facility has the potential to emit 172.8 tpy of Nitrogen Oxides and 155.0 tpy of Volatile Organic Compounds. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, JELD-WEN, Inc. dba JELD-WEN is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers.
	45CSR6	Control of Air Pollution from Combustion of Refuse.
	45CSR7	Control of Particulate Matter Air Pollution from Manufacturing Processes and Associated Operations.
	45CSR10	To Prevent and Control Air Pollution from the Emission of Sulfur Oxides.
	45CSR11	Standby plans for emergency episodes.
	45CSR13	NSR Permit Requirements.
	45CSR16	Standards of Performance for New Stationary Sources.
	45CSR30	Operating Permit Requirements.
	45CSR34	Emission Standards for Hazardous Air Pollutants.
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	40 C.F.R. Part 60 Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.
	40 C.F.R. Part 61	Asbestos Inspection and Removal.

	40 C.F.R. Part 63 Subpart JJJJJJ	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources.
	40 C.F.R. Part 64	Compliance Assurance Monitoring (CAM).
	40 C.F.R. Part 82 Subpart F	Ozone Depleting Substances.
State Only:	45CSR4	No objectionable odors.

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance
R13-2192R	August 8, 2023

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

Determinations and Justifications

The following revisions have been made to the Title V operating permit:

1. Section 1.0. – Emission Units and Active R13, R14, and R19 Permits

    a. Per the permittee's request, the Emission Units Table has been updated as follows:

        i. The Emission Unit ID of the coating manufacturing (Emission Point ID: E15) has been changed from DC2 to CM.

        ii. The Emission Unit ID of the die coating (Emission Point ID: E17) has been changed from DC to DB.

2. Section 3.0. – Facility-Wide Requirements

    a. The requirements for the Operation and Maintenance of Air Pollution Control Equipment were previously included in the operating permit under Conditions 4.1.10. and 5.1.14. As these requirements are applicable to all air pollution control equipment listed in Section 1.0., the Operation and Maintenance of Air Pollution Control Equipment requirements have been added to the facility-wide requirements under Condition 3.1.11. of the operating permit.

    b. The Record of Maintenance of Air Pollution Control Equipment and the Record of Malfunctions of Air Pollution Control Equipment were previously included in Conditions 5.4.2. and 5.4.3., respectively, of the operating permit. As these recordkeeping requirements are applicable to all air pollution control equipment

listed in Section 1.0., they have been added to the facility-wide recordkeeping requirements under Conditions 3.4.5. and 3.4.6. of the operating permit.

3. Section 4.0. – Boilers

   a. 45CSR2 has been revised since the issuance of the previous operating permit. The following changes have been made to Section 4.0. of this operating permit due to these revisions.

      i. Condition 4.1.2. previously contained the requirement of 45CSR§2-9.1. which required the permittee to meet the visible emission standards of 45CSR§2-3 except during periods of start-ups, shutdowns, and malfunctions. This requirement was removed from 45CSR2 and, therefore, Condition 4.1.2. has been reserved.

      ii. In the footnotes to the tables in Conditions 4.1.6. and 4.1.7., the references to 45CSR§2-4.1.b. have been revised to 45CSR§2-4.1.2.

      iii. In Condition 4.4.2., the authority has been updated from 45CSR§2-8.3.c. to 45CSR§2-8.3.3.

      iv. In Condition 4.5.1.b., the reference to 45CSR§2-9.3.a. has been revised to 45CSR§2-9.3.1. and "telefax" has been removed.

   b. 45CSR10 has been revised since the issuance of the previous operating permit. In the footnotes to the tables in Conditions 4.1.6. and 4.1.7., the references to 45CSR§10-3.3.f. have been revised to 45CSR§10-3.3.6.

   c. Condition 4.1.10. has been reserved. Condition 4.1.10. previously contained the Operation and Maintenance of Air Pollution Control Equipment requirements which were applicable to all air pollution control equipment listed in Section 1.0. Therefore, these requirements have been added in the facility-wide requirements under Condition 3.1.11. of this renewal permit (see 2.a. of this Fact Sheet).

   d. With the issuance of R13-2192Q and R30-06700095-2019, the JELD-WEN, Wood Fiber Division facility became an area source of HAPs, and the hogged fuel-fired boiler (B1) became subject to the tune-up and energy assessment requirements of 40 C.F.R. Part 63 Subpart JJJJJJ. However, as the boiler B1 was previously subject to the standards for boilers located at major sources of HAPs under 40 C.F.R. Part 63 Subpart DDDDD, the requirements for an initial tune-up and an energy assessment have been met.

      i. The requirement to conduct an initial tune-up of the boiler B1 as specified in §63.11214 was removed from Condition 4.1.11. Tune-ups of the boiler had previously been conducted under Subpart DDDDD and have since been performed under Subpart JJJJJJ. The permittee remains subject to the requirement to conduct a tune-up biennially as specified in §63.11223.

      ii. The one-time energy assessment requirement has been removed from Condition 4.1.12. An energy assessment of the boiler had previously been performed on February 18-22, 2013.

   e. The requirement to conduct a performance test of the hogged fuel-fired boiler B1 "within 180 days of issuance of this permit" has been removed from Condition 4.3.2. This testing requirement was first included in R13-2192Q as Condition 4.2.1. to demonstrate compliance with the boiler B1's emission limitations and was met through the performance test conducted on October 29, 2019. The permittee remains subject to the requirement to conduct a performance test of the boiler at least once every five years.

   f. Condition 4.4.5. contains the recordkeeping requirements of 40 C.F.R. Part 63 Subpart JJJJJJ which are applicable to the hogged fuel-fired boiler (B1).

i. Paragraph a.2.iv. previously contained the standards of §63.11225(c)(2)(iv) which requires the permittee to maintain records of monthly fuel used by each boiler subject to an emission limit in Table 1 to Subpart JJJJJJ of Part 63. However, as the boiler B1 is an existing biomass-fired boiler under Subpart JJJJJJ, the emission limits of Table 1 to Subpart JJJJJJ are inapplicable.

ii. Paragraph a.2.v. previously contained the standard of §63.11225(c)(2)(v) which requires the permittee to maintain records of days of operation per year for each seasonal boiler. As the hogged fuel-fired boiler does not meet the definition of a seasonal boiler, this recordkeeping requirement is inapplicable.

iii. Paragraph a.2.vi. contained the recordkeeping requirements of §63.11225(c)(2)(vi) which applies to each boiler meeting the definition of a limited-use boiler. As the hogged fuel-fired boiler does not meet the definition of a limited-use boiler, this recordkeeping requirement is inapplicable.

iv. §§63.11225(c)(4) and (c)(5) contain the Subpart JJJJJJ recordkeeping requirements for periods of malfunction of the boiler and/or the associated air pollution control equipment. These requirements are applicable to the boiler B1 and have, therefore, been added to the operating permit as paragraphs a.3. and a.4. of this condition.

4. Section 5.0. – Door Skin Manufacturing

a. Condition 5.1.14. has been Reserved. Condition 5.1.14. previously contained the Operation and Maintenance of Air Pollution Control Equipment requirements which were applicable to all the control equipment listed in Section 1.0. of the operating permit. Therefore, these requirements have been added in the facility-wide requirements under Condition 3.1.11. of this renewal permit (see 2.a. of this Fact Sheet).

b. Condition 5.1.18. has been removed from the operating permit. This condition previously contained the provisions of 45CSR§7-9.1. which was removed with revisions made to 45CSR7.

c. The Response to Excursions or Exceedances requirements of 40 C.F.R. §64.7(d) are applicable to the baghouses that are subject to CAM. As §64.7(d) has been added to the operating permit under Condition 5.2.8. (see the table of requirements added to the operating permit in 4.f. of this Fact Sheet), the requirements for detecting an excursion or exceedance have been removed from Conditions 5.2.4. and 5.3.1.

d. The requirement to conduct a performance test of the biofilter (BF) "within 180 days of issuance of this permit" has been removed from Condition 5.3.2. This requirement was first included in R13-2192Q as Condition 4.2.1. to demonstrate compliance with the emission limitations of the biofilter and was met through the performance test conducted on October 30-31, 2019. The permittee remains subject to the requirement to conduct a performance test of the biofilter at least once every five years.

e. Conditions 5.4.1. through 5.4.3. of R30-06700095-2019 (MM01) have been removed from this renewal permit, and the subsequent conditions have been renumbered accordingly.

i. Condition 5.4.1. contained a reference to the Record of Monitoring requirements which are included in Condition 3.4.1. As the Record of Monitoring requirements are applicable facility-wide, the reference in Condition 5.4.1. is repetitive and, therefore, has been removed.

ii. Conditions 5.4.2. and 5.4.3. also previously contained recordkeeping requirements which were applicable to all air pollution control equipment listed in Section 1.0. Therefore, these requirements have been added in the facility-wide recordkeeping requirements under Conditions 3.4.5. and 3.4.6. of this renewal permit (see 2.b. of this Fact Sheet).

f. 40 C.F.R. Part 64 – Compliance Assurance Monitoring (CAM)

The press vents (PV) and fiber dryer (D1) meet the CAM applicability criteria of §64.2:

§64.2(a)(1) Emissions from the press vents and fiber dryer are vented to the biofilter (BF) which is subject to emission limitations for Methanol and aggregate HAPs under Condition 4.1.6. of R13-2192R.

§64.2(a)(2) The biofilter is used to control emissions of Methanol and organic HAPs from the press vents and fiber dryer.

§64.2(a)(3) Using emission factors for the biofilter inlet derived from prior performance tests conducted in 2014, 2016, and 2018, it has been determined that pre-control device emissions of Methanol and pre-control device emissions of aggregate HAPs exceed the Title V major source thresholds of 10 tpy for a single HAP and 25 tpy for any combination of HAPs, respectively.

Therefore, the press vents and fiber dryer are pollutant-specific emissions units (PSEUs) for Methanol and aggregate HAPs. As the post-control device Methanol and aggregate HAP emissions are below Title V major source thresholds, the press vents and fiber dryer are considered "other" PSEUs, and the CAM Plan has been submitted during this operating permit renewal in accordance with 40 C.F.R. §64.5(b).

Pre-control device emissions of VOCs and other individual HAPs do not exceed the Title V major source thresholds. Therefore, the press vents and fiber dryer are not subject to CAM for these pollutants.

To demonstrate compliance with CAM for Methanol and aggregate HAPs, monitoring of the biofilter will be conducted as follows:

Press Vents (PV) and Fiber Dryer (D1)		
	Indicator No. 1	**Indicator No. 2**
I. Indicator	Biofilter Bed Temperature	Performance Testing of the Methanol and Aggregate HAP Emissions from the Biofilter Outlet
A. Monitoring Approach	A thermocouple will be used to monitor the biofilter bed temperature.	Performance testing will be conducted at least once every five years to ensure that the Condition 5.1.6. emission limits for Methanol and aggregate HAPs are being met.
II. Indicator Range	An excursion occurs when the 24-hour block average of the biofilter bed temperature is less than 81°F or greater than 135°F. If an excursion occurs, an evaluation of the occurrence will be conducted, and appropriate corrective actions will be taken. Any excursions and corrective actions will be documented and reported.	An exceedance occurs if the arithmetic mean of three test runs shows that emissions of Methanol and/or aggregate HAPs surpassed the respective limit in Condition 5.1.6. If an exceedance occurs, an evaluation of the occurrence will be conducted, and appropriate corrective actions will be taken. Any exceedances and corrective actions will be documented and reported.

Press Vents (PV) and Fiber Dryer (D1)		
	Indicator No. 1	**Indicator No. 2**
A. QIP Threshold	A threshold for requiring the implementation of a QIP has not been specified at this time. The requirements for a QIP have been included by reference in Condition 5.2.10. of the operating permit.	A threshold for requiring the implementation of a QIP has not been specified at this time. The requirements for a QIP have been included by reference in Condition 5.2.10. of the operating permit.
III. Performance Criteria		
A. Data Representativeness	The biofilter bed temperature is monitored by a single thermocouple located in the treatment media. The thermocouple has a minimum accuracy of ±0.27°F.	The source testing will be conducted in accordance with EPA-approved test methods.
B. Verification of Operational Status	Not Applicable. The thermocouples are neither new nor modified.	Not Applicable.
C. QA/QC Practices and Criteria	The thermocouple is calibrated semi-annually.	Accredited testing companies and laboratories will conduct the performance tests.
D. Monitoring Frequency	During operation of the PSEUs, the biofilter bed temperature is monitored continuously at 15-minute intervals.	The performance tests must be conducted at least once every five years as required under Condition 5.3.2. of the Title V operating permit.
E. Data Collection Procedure	Temperature data is electronically collected and recorded.	Data will be collected during the testing in accordance with the applicable EPA approved test method.
F. Averaging Period	24-hour block average of temperature readings.	Not Applicable.

The following requirements have been added to the operating permit to demonstrate compliance with CAM:

Title V Permit Condition	**Summary**	**Regulatory Citation**
5.2.5.	To demonstrate compliance with CAM, the biofilter bed temperature must be monitored via a thermocouple. An excursion has been defined as a biofilter bed temperature (calculated as a 24-hour block average based on data collected at 15-minute intervals during operation) that is less than 81°F or greater than 135°F.	40 C.F.R. §64.6(c) 45CSR§30-5.1.c.

Title V Permit Condition	Summary	Regulatory Citation
5.2.8.	The Response to Excursions or Exceedances requirements of the CAM rule have been added as Condition 5.2.8. of the operating permit.	40 C.F.R. §64.7(d) 45CSR§30-5.1.c.
5.2.10.	A QIP may be required based on the determination made under 40 C.F.R. §64.7(d)(2). If required, the QIP must be developed and implemented in accordance with 40 C.F.R. §§64.8(b) through (e).	40 C.F.R. §64.8 45CSR§30-5.1.c.
5.3.2.	Under Condition 4.2.1. of R13-2192R, the permittee is required to conduct a performance test of the biofilter every five years to demonstrate compliance with the VOC and Total HAPs emission limits. These periodic performance tests will be used as an indicator under the CAM Plan for the biofilter. Therefore, this condition has been updated to define that, for the purposes of CAM, an exceedance of the Methanol and/or aggregate HAPs emission limits occurs when the average of three test runs surpasses the respective emission limit.	40 C.F.R. §64.6(c) 45CSR§30-5.1.c. 45CSR13

The following CAM requirements which were previously included in the operating permit are applicable to the biofilter:

Title V Permit Condition	Summary	Regulatory Citation
5.2.6.	Requirements for proper maintenance of monitoring equipment.	40 C.F.R. §64.7(b) 45CSR§30-5.1.c.
5.2.7.	The permittee shall conduct monitoring as required at all times that the PSEU is in operation.	40 C.F.R. §64.7(c) 45CSR§30-5.1.c.
5.2.9.	Requirements for documentation of need for improved monitoring.	40 C.F.R. §64.7(e) 45CSR§30-5.1.c.
5.4.4.	General recordkeeping requirements for CAM.	40 C.F.R. §64.9(b) 45CSR§30-5.1.c.
5.5.1.	General reporting requirements for monitoring under CAM.	40 C.F.R. §64.9(a) 45CSR§30-5.1.c.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

None.

Request for Variances or Alternatives

None.

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date:
Ending Date:

Point of Contact

All written comments should be addressed to the following individual and office:

Sarah Barron
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
304/414-1915
sarah.k.barron@wv.gov

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Response to Comments (Statement of Basis)

Not applicable.

West Virginia Department of Environmental Protection

Harold D. Ward
Cabinet Secretary

Permit to Operate

Pursuant to

Title V

of the Clean Air Act

Issued to:

JELD-WEN, Inc. dba JELD-WEN
JELD-WEN, Wood Fiber Division
R30-06700095-2024

Laura M. Crowder
Director, Division of Air Quality

Issued: [Date of issuance] • *Effective: [Equals issue date plus two weeks]*
Expiration: [5 years after issuance date] • *Renewal Application Due: [6 months prior to expiration]*

Permit Number: **R30-06700095-2024**
Permittee: **JELD-WEN, Inc. dba JELD-WEN**
Facility Name: **JELD-WEN, Wood Fiber Division**
Permittee Mailing Address: **500 Jeld-Wen Road, Craigsville, WV 26205**

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§ 22-5-1 et seq.) and 45CSR30 C Requirements for Operating Permits. The permittee identified at the above-referenced facility is authorized to operate the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Facility Location:	Craigsville, Nicholas County, West Virginia
Facility Mailing Address:	500 JELD-WEN Road, Craigsville, WV 26205
Telephone Number:	(304) 742-5180
Type of Business Entity:	Corporation
Facility Description:	The facility manufactures wood fiber door skins.
SIC Codes:	Primary 2493; Secondary 2851
UTM Coordinates:	529.8 km Easting • 4,243.8 km Northing • Zone 17

Permit Writer: Sarah Barron

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.

Issuance of this Title V Operating Permit does not supersede or invalidate any existing permits under 45CSR13, 14 or 19, although all applicable requirements from such permits governing the facility's operation and compliance have been incorporated into the Title V Operating Permit.

Table of Contents

1.0 Emission Units and Active R13, R14, and R19 Permits

1.1. Emission Units

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
TD	E1 (Fugitive)	Truck Dump	May 1, 1998	38,053 lbs/hr	None
FSE	E2a,b,c,d,e	East Furnish Storage Silo	May 1, 1998	46,563 ft^3	None
FSW	E3a,b,c,d,e	West Furnish Storage Silo	May 1, 1998	46,563 ft^3	None
FLSN	E4	North Fuel Storage Silo	May 1, 1998	28,740 ft^3	BH3 (Baghouse)
FLSS		South Fuel Storage Silo		28,740 ft^3	
FLa		Fiber Line Prior to Press (Former)		13,323 lbs/hr	
C2		Recycle Cyclone		1,404 lbs/hr	
C3		Waste Cyclone		3,037 lbs/hr	
C4		Middle Reject Cyclone		1,404 lbs/hr	
C6		Chip Cyclone		23,944 lbs/hr	
B1	E5	Hogged Fuel-Fired Boiler	May 1, 1998	62.5 MMBtu/hr	MC (multiclone), ESP (Electrostatic Precipitator)
B2	E6	Natural Gas-Fired Boiler	May 1, 1998	37.7 MMBtu/hr	None
D1	E18	Fiber Dryer	May 1, 1998	23,942 lbs/hr	BH1a (Baghouse) BH1b (Baghouse) BH1c (Baghouse) BF (Biofilter) BH6 (Baghouse)
C1		Dryer Cyclone		30,257 lbs/hr	
C8		Dryer Baghouse Purge Cyclone		302 lbs/hr	
PV		Press Vents		23,942 SF/hr	
C7		Press Vent Baghouse Purge Cyclone		3.2 lbs/hr	
FLa	E10	Fiber Line Prior to Press (Former)	May 1, 1998	13,323 lbs/hr	BH2 (Baghouse)
FLb	E12	Fiber Line After Press (Sizer)	May 1, 1998	21,591 SF/hr	BH4 (Baghouse)
C5		Chip Cleaning Cyclone	May 1, 1998	2,667 lbs/hr	
DC		Die Cleaning Operation	2009	120 lbs/hr Na_2CO_3	
PL	E13	Primeline (Ovens)	May 1, 1998	3.8 MMBtu/hr (total)	None
PL	E14	Primeline (Paint Booth)	May 1, 1998	71.0 gals/hr	None
CM	E15	Coating Manufacturing	April 1, 1999	760 gals/hr	BH5 (Baghouse)
RV	E16	Refiner Rotary Valve	May 1, 1998	23,944 lbs/hr	None
DB	E17	Die Coating	May 1, 1998	145 gal coating/yr	None
CV1 – CV5	Fugitive	Conveyors	May 1, 1998	148 tons/hr (total)	None
RS	Fugitive	Rotary Classifier	May 1, 1998	40 tons/hr	None
ST1	Fugitive	Resin Storage Tank 1	May 1, 1998	7,000 gallons	None
ST2	Fugitive	Resin Storage Tank 2	May 1, 1998	7,000 gallons	None
ST3	Fugitive	Wax Storage Tank	May 1, 1998	10,000 gallons	None

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
ST4	Fugitive	Coating Raw Material Storage Tank	May 1, 1999	10,000 gallons	None
ST5	Fugitive	Coating Raw Material Storage Tank	April 1, 1999	6,000 gallons	None
ST6	Fugitive	Coating Storage Tank	May 1, 1998	10,000 gallons	None
ST7	Fugitive	Coating Storage Tank	May 1, 1999	10,000 gallons	None
ST8	Fugitive	Coating Storage Tank	June 1, 1999	10,000 gallons	None
ST9	Fugitive	Coating Storage Tank	April 1, 1999	6,000 gallons	None

1.2. Active R13, R14, and R19 Permits

The underlying authority for any conditions from R13, R14, and/or R19 permits contained in this operating permit is cited using the original permit number (e.g. R13-1234). The current applicable version of such permit(s) is listed below.

Permit Number	Date of Issuance
R13-2192R	August 08, 2023

2.0 General Conditions

2.1. Definitions

2.1.1. All references to the "West Virginia Air Pollution Control Act" or the "Air Pollution Control Act" mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.

2.1.2. The "Clean Air Act" means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.

2.1.3. "Secretary" means the Secretary of the Department of Environmental Protection or other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.39.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.

2.1.4. Unless otherwise specified in a permit condition or underlying rule or regulation, all references to a "rolling yearly total" shall mean the sum of the monthly data, values or parameters being measured, monitored, or recorded, at any given time for the previous twelve (12) consecutive calendar months.

2.2. Acronyms

CAAA	Clean Air Act Amendments	**NSPS**	New Source Performance Standards
CBI	Confidential Business Information	**PM**	Particulate Matter
CEM	Continuous Emission Monitor	**PM_{10}**	Particulate Matter less than 10μm in diameter
CES	Certified Emission Statement	**pph**	Pounds per Hour
C.F.R. *or* CFR	Code of Federal Regulations	**ppm**	Parts per Million
CO	Carbon Monoxide	**PSD**	Prevention of Significant Deterioration
C.S.R. *or* CSR	Codes of State Rules	**psi**	Pounds per Square Inch
DAQ	Division of Air Quality	**SIC**	Standard Industrial Classification
DEP	Department of Environmental Protection	**SIP**	State Implementation Plan
FOIA	Freedom of Information Act	**SO_2**	Sulfur Dioxide
HAP	Hazardous Air Pollutant	**TAP**	Toxic Air Pollutant
HON	Hazardous Organic NESHAP	**TPY**	Tons per Year
HP	Horsepower	**TRS**	Total Reduced Sulfur
lbs/hr *or* lb/hr	Pounds per Hour	**TSP**	Total Suspended Particulate
LDAR	Leak Detection and Repair	**USEPA**	United States Environmental Protection Agency
m	Thousand	**UTM**	Universal Transverse Mercator
MACT	Maximum Achievable Control Technology	**VEE**	Visual Emissions Evaluation
mm	Million	**VOC**	Volatile Organic Compounds
mmBtu/hr	Million British Thermal Units per Hour		
$mmft^3$/hr *or* mmcf/hr	Million Cubic Feet Burned per Hour		
NA *or* N/A	Not Applicable		
NAAQS	National Ambient Air Quality Standards		
NESHAPS	National Emissions Standards for Hazardous Air Pollutants		
NO_x	Nitrogen Oxides		

2.3. Permit Expiration and Renewal

2.3.1. Permit duration. This permit is issued for a fixed term of five (5) years and shall expire on the date specified on the cover of this permit, except as provided in 45CSR§30-6.3.b. and 45CSR§30-6.3.c.
[45CSR§30-5.1.b.]

2.3.2. A permit renewal application is timely if it is submitted at least six (6) months prior to the date of permit expiration.
[45CSR§30-4.1.a.3.]

2.3.3. Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted consistent with 45CSR§30-6.2. and 45CSR§30-4.1.a.3.
[45CSR§30-6.3.b.]

2.3.4. If the Secretary fails to take final action to deny or approve a timely and complete permit application before the end of the term of the previous permit, the permit shall not expire until the renewal permit has been issued or denied, and any permit shield granted for the permit shall continue in effect during that time.
[45CSR§30-6.3.c.]

2.4. Permit Actions

2.4.1. This permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
[45CSR§30-5.1.f.3.]

2.5. Reopening for Cause

2.5.1. This permit shall be reopened and revised under any of the following circumstances:

a. Additional applicable requirements under the Clean Air Act or the Secretary's legislative rules become applicable to a major source with a remaining permit term of three (3) or more years. Such a reopening shall be completed not later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to 45CSR§§30-6.6.a.1.A. or B.

b. Additional requirements (including excess emissions requirements) become applicable to an affected source under Title IV of the Clean Air Act (Acid Deposition Control) or other legislative rules of the Secretary. Upon approval by U.S. EPA, excess emissions offset plans shall be incorporated into the permit.

c. The Secretary or U.S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

d. The Secretary or U.S. EPA determines that the permit must be revised or revoked and reissued to assure compliance with the applicable requirements.

[45CSR§30-6.6.a.]

2.6. Administrative Permit Amendments

2.6.1. The permittee may request an administrative permit amendment as defined in and according to the procedures specified in 45CSR§30-6.4.
[45CSR§30-6.4.]

2.7. Minor Permit Modifications

2.7.1. The permittee may request a minor permit modification as defined in and according to the procedures specified in 45CSR§30-6.5.a.
[45CSR§30-6.5.a.]

2.8. Significant Permit Modification

2.8.1. The permittee may request a significant permit modification, in accordance with 45CSR§30-6.5.b., for permit modifications that do not qualify for minor permit modifications or as administrative amendments.
[45CSR§30-6.5.b.]

2.9. Emissions Trading

2.9.1. No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in the permit and that are in accordance with all applicable requirements.
[45CSR§30-5.1.h.]

2.10. Off-Permit Changes

2.10.1. Except as provided below, a facility may make any change in its operations or emissions that is not addressed nor prohibited in its permit and which is not considered to be construction nor modification under any rule promulgated by the Secretary without obtaining an amendment or modification of its permit. Such changes shall be subject to the following requirements and restrictions:

a. The change must meet all applicable requirements and may not violate any existing permit term or condition.

b. The permittee must provide a written notice of the change to the Secretary and to U.S. EPA within two (2) business days following the date of the change. Such written notice shall describe each such change, including the date, any change in emissions, pollutants emitted, and any applicable requirement that would apply as a result of the change.

c. The change shall not qualify for the permit shield.

d. The permittee shall keep records describing all changes made at the source that result in emissions of regulated air pollutants, but not otherwise regulated under the permit, and the emissions resulting from those changes.

e. No permittee may make any change subject to any requirement under Title IV of the Clean Air Act (Acid Deposition Control) pursuant to the provisions of 45CSR§30-5.9.

f. No permittee may make any changes which would require preconstruction review under any provision of Title I of the Clean Air Act (including 45CSR14 and 45CSR19) pursuant to the provisions of 45CSR§30-5.9.

[45CSR§30-5.9.]

2.11. Operational Flexibility

2.11.1. The permittee may make changes within the facility as provided by § 502(b)(10) of the Clean Air Act. Such operational flexibility shall be provided in the permit in conformance with the permit application and applicable requirements. No such changes shall be a modification under any rule or any provision of Title I of the Clean Air Act (including 45CSR14 and 45CSR19) promulgated by the Secretary in accordance with Title I of the Clean Air Act and the change shall not result in a level of emissions exceeding the emissions allowable under the permit.
[45CSR§30-5.8]

2.11.2. Before making a change under 45CSR§30-5.8., the permittee shall provide advance written notice to the Secretary and to U.S. EPA, describing the change to be made, the date on which the change will occur, any changes in emissions, and any permit terms and conditions that are affected. The permittee shall thereafter maintain a copy of the notice with the permit, and the Secretary shall place a copy with the permit in the public file. The written notice shall be provided to the Secretary and U.S. EPA at least seven (7) days prior to the date that the change is to be made, except that this period may be shortened or eliminated as necessary for a change that must be implemented more quickly to address unanticipated conditions posing a significant health, safety, or environmental hazard. If less than seven (7) days notice is provided because of a need to respond more quickly to such unanticipated conditions, the permittee shall provide notice to the Secretary and U.S. EPA as soon as possible after learning of the need to make the change.
[45CSR§30-5.8.a.]

2.11.3. The permit shield shall not apply to changes made under 45CSR§30-5.8., except those provided for in 45CSR§30-5.8.d. However, the protection of the permit shield will continue to apply to operations and emissions that are not affected by the change, provided that the permittee complies with the terms and conditions of the permit applicable to such operations and emissions. The permit shield may be reinstated for emissions and operations affected by the change:

a. If subsequent changes cause the facility's operations and emissions to revert to those authorized in the permit and the permittee resumes compliance with the terms and conditions of the permit, or

b. If the permittee obtains final approval of a significant modification to the permit to incorporate the change in the permit.

[45CSR§30-5.8.c.]

2.11.4. "Section 502(b)(10) changes" are changes that contravene an express permit term. Such changes do not include changes that would violate applicable requirements or contravene enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.
[45CSR§30-2.40]

2.12. Reasonably Anticipated Operating Scenarios

2.12.1. The following are terms and conditions for reasonably anticipated operating scenarios identified in this permit.

a. Contemporaneously with making a change from one operating scenario to another, the permittee shall record in a log at the permitted facility a record of the scenario under which it is operating and to document the change in reports submitted pursuant to the terms of this permit and 45CSR30.

b. The permit shield shall extend to all terms and conditions under each such operating scenario; and

c. The terms and conditions of each such alternative scenario shall meet all applicable requirements and the requirements of 45CSR30.

[45CSR§30-5.1.i.]

2.13. Duty to Comply

2.13.1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.
[45CSR§30-5.1.f.1.]

2.14. Inspection and Entry

2.14.1. The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;

d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

[45CSR§30-5.3.b.]

2.15. Schedule of Compliance

2.15.1. For sources subject to a compliance schedule, certified progress reports shall be submitted consistent with the applicable schedule of compliance set forth in this permit and 45CSR§30-4.3.h., but at least every six (6) months, and no greater than once a month, and shall include the following:

a. Dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones or compliance were achieved; and

b. An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measure adopted.

[45CSR§30-5.3.d.]

2.16. Need to Halt or Reduce Activity not a Defense

2.16.1. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.
[45CSR§30-5.1.f.2.]

2.17. Reserved

2.18. Federally-Enforceable Requirements

2.18.1. All terms and conditions in this permit, including any provisions designed to limit a source's potential to emit and excepting those provisions that are specifically designated in the permit as "State-enforceable only", are enforceable by the Secretary, USEPA, and citizens under the Clean Air Act.
[45CSR§30-5.2.a.]

2.18.2. Those provisions specifically designated in the permit as “State-enforceable only” shall become “Federally-enforceable” requirements upon SIP approval by the USEPA.

2.19. Duty to Provide Information

2.19.1. The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records required to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.
[45CSR§30-5.1.f.5.]

2.20. Duty to Supplement and Correct Information

2.20.1. Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.
[45CSR§30-4.2.]

2.21. Permit Shield

2.21.1. Compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance provided that such applicable requirements are included and are specifically identified in this permit or the Secretary has determined that other requirements specifically identified are not applicable to the source and this permit includes such a determination or a concise summary thereof.
[45CSR§30-5.6.a.]

2.21.2. Nothing in this permit shall alter or affect the following:

a. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance; or

b. The applicable requirements of the Code of West Virginia and Title IV of the Clean Air Act (Acid Deposition Control), consistent with § 408 (a) of the Clean Air Act.

c. The authority of the Administrator of U.S. EPA to require information under § 114 of the Clean Air Act or to issue emergency orders under § 303 of the Clean Air Act.

[45CSR§30-5.6.c.]

2.22. Credible Evidence

2.22.1. Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee including but not limited to any challenge to the credible evidence rule in the context of any future proceeding.
[45CSR§30-5.3.e.3.B.]

2.23. Severability

2.23.1. The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid by a court of competent jurisdiction, the remaining permit terms and conditions or their application to other circumstances shall remain in full force and effect.
[45CSR§30-5.1.e.]

2.24. Property Rights

2.24.1. This permit does not convey any property rights of any sort or any exclusive privilege.
[45CSR§30-5.1.f.4]

2.25. Acid Deposition Control

2.25.1. Emissions shall not exceed any allowances that the source lawfully holds under Title IV of the Clean Air Act (Acid Deposition Control) or rules of the Secretary promulgated thereunder.

a. No permit revision shall be required for increases in emissions that are authorized by allowances acquired pursuant to the acid deposition control program, provided that such increases do not require a permit revision under any other applicable requirement.

b. No limit shall be placed on the number of allowances held by the source. The source may not, however, use allowances as a defense to noncompliance with any other applicable requirement.

c. Any such allowance shall be accounted for according to the procedures established in rules promulgated under Title IV of the Clean Air Act.

[45CSR§30-5.1.d.]

2.25.2. Where applicable requirements of the Clean Air Act are more stringent than any applicable requirement of regulations promulgated under Title IV of the Clean Air Act (Acid Deposition Control), both provisions shall be incorporated into the permit and shall be enforceable by the Secretary and U. S. EPA.
[45CSR§30-5.1.a.2.]

3.0 Facility-Wide Requirements

3.1. Limitations and Standards

3.1.1. **Open burning.** The open burning of refuse by any person is prohibited except as noted in 45CSR§6-3.1. **[45CSR§6-3.1.]**

3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause or allow any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible. **[45CSR§6-3.2.]**

3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them. **[40 C.F.R. §61.145(b) and 45CSR34]**

3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public. **[45CSR§4-3.1 State-Enforceable only.]**

3.1.5. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11. **[45CSR§11-5.2]**

3.1.6. **Emission inventory.** The permittee is responsible for submitting, on an annual basis, an emission inventory in accordance with the submittal requirements of the Division of Air Quality. **[W.Va. Code § 22-5-4(a)(14)]**

3.1.7. **Ozone-depleting substances.** For those facilities performing maintenance, service, repair or disposal of appliances, the permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 C.F.R. Part 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:

a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the prohibitions and required practices pursuant to 40 C.F.R. §§ 82.154 and 82.156.

b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 C.F.R. § 82.158.

c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 C.F.R. § 82.161.

[40 C.F.R. 82, Subpart F]

3.1.8. **Risk Management Plan.** Should this stationary source, as defined in 40 C.F.R. § 68.3, become subject to Part 68, then the owner or operator shall submit a risk management plan (RMP) by the date specified in 40 C.F.R. § 68.10 and shall certify compliance with the requirements of Part 68 as part of the annual compliance certification as required by 40 C.F.R. Part 70 or 71.
[40 C.F.R. 68]

3.1.9. No person shall cause, suffer, allow or permit any manufacturing process or storage structure generating fugitive particulate matter to operate that is not equipped with a system, which may include, but not be limited to, process equipment design, control equipment design or operation and maintenance procedures, to minimize the emissions of fugitive particulate matter. To minimize means such system shall be installed, maintained and operated to ensure the lowest fugitive particulate matter emissions reasonably achievable. (Not applicable to E5 & E6)
[45CSR§7-5.1.]

3.1.10. The owner or operator of a plant shall maintain particulate matter control of the plant premises, and plant owned, leased or controlled access roads, by paving, application of asphalt, chemical dust suppressants or other suitable dust control measures. Good operating practices shall be implemented and when necessary particulate matter suppressants shall be applied in relation to stockpiling and general material handling to minimize particulate matter generation and atmospheric entrainment. (Not applicable to E5 & E6)
[45CSR§7-5.2.]

3.1.11. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.
[45CSR13 – Permit R13-2192 §4.1.21.; 45CSR§13-5.10.]

3.2. Monitoring Requirements

3.2.1. Reserved.

3.3. Testing Requirements

3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63, if applicable, in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable.

b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit.

c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.

d. The permittee shall submit a report of the results of the stack test within 60 days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:

1. The permit or rule evaluated, with the citation number and language.

2. The result of the test for each permit or rule condition.

3. A statement of compliance or non-compliance with each permit or rule condition.

[WV Code §§ 22-5-4(a)(14-15) and 45CSR13]

3.4. Recordkeeping Requirements

3.4.1. **Monitoring information.** The permittee shall keep records of monitoring information that include the following:

a. The date, place as defined in this permit and time of sampling or measurements;

b. The date(s) analyses were performed;

c. The company or entity that performed the analyses;

d. The analytical techniques or methods used;

e. The results of the analyses; and

f. The operating conditions existing at the time of sampling or measurement.

[45CSR§30-5.1.c.2.A.; 45CSR13 – Permit R13-2192 §4.3.1.]

3.4.2. **Retention of records.** The permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of monitoring sample, measurement, report, application, or record creation date. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Where appropriate, records may be maintained in computerized form in lieu of the above records.
[45CSR§30-5.1.c.2.B.]

3.4.3. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.
[45CSR§30-5.1.c. State-Enforceable only.]

3.4.4. The permittee shall maintain records indicating the use of any dust suppressants or any other suitable dust control measures applied at the facility. The permittee shall also inspect all fugitive dust control systems monthly to ensure that they are operated and maintained in conformance with their designs. The permittee shall maintain records of all scheduled and non-scheduled maintenance and shall state any maintenance or corrective actions taken as a result of the monthly inspections, the times the fugitive dust control system(s) were inoperable and any corrective actions taken.
[45CSR§30-5.1.c.]

3.4.5. **Record of Maintenance of Air Pollution Control Equipment.** For all pollution control equipment listed in Section 1.1, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.
[45CSR13 – Permit R13-2192 §4.3.2.]

3.4.6. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment listed in Section 1.1, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

a. The equipment involved.

b. Steps taken to minimize emissions during the event.

c. The duration of the event.

d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

e. The cause of the malfunction.

f. Steps taken to correct the malfunction.

g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

[45CSR13 – Permit R13-2192 §4.3.3.]

3.5. Reporting Requirements

3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.
[45CSR§§30-4.4. *and* 5.1.c.3.D.]

3.5.2. A permittee may request confidential treatment for the submission of reporting required under 45CSR§30-5.1.c.3. pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.
[45CSR§30-5.1.c.3.E.]

3.5.3. Except for the electronic submittal of the annual compliance certification and semi-annual monitoring reports to the DAQ and USEPA as required in 3.5.5 and 3.5.6 below, all notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class or by private carrier with postage prepaid to the address(es), or submitted in electronic format by e-mail as set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

DAQ:

Director
WVDEP
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

US EPA:

Section Chief
U. S. Environmental Protection Agency, Region III
Enforcement and Compliance Assurance Division
Air, RCRA, and Toxics Branch (3ED21)
Four Penn Center
1600 John F. Kennedy Boulevard
Philadelphia, PA 19103-2852

DAQ Compliance and Enforcement[1]:
DEPAirQualityReports@wv.gov

[1]For all self-monitoring reports (MACT, GACT, NSPS, etc.), stack tests and protocols, Notice of Compliance Status reports, Initial Notifications, etc.

3.5.4. **Fees.** The permittee shall pay fees on an annual basis in accordance with 45CSR§30-8.
[45CSR§30-8.]

3.5.5. **Compliance certification.** The permittee shall certify compliance with the conditions of this permit on the forms provided by the DAQ. In addition to the annual compliance certification, the permittee may be required to submit certifications more frequently under an applicable requirement of this permit. The annual certification shall be submitted to the DAQ and USEPA on or before March 15 of each year, and shall certify

compliance for the period ending December 31. The permittee shall maintain a copy of the certification on site for five (5) years from submittal of the certification. The annual certification shall be submitted in electronic format by e-mail to the following addresses:

DAQ:	**US EPA:**
DEPAirQualityReports@wv.gov	R3_APD_Permits@epa.gov

[45CSR§30-5.3.e.]

3.5.6. **Semi-annual monitoring reports.** The permittee shall submit reports of any required monitoring on or before September 15 for the reporting period January 1 to June 30 and on or before March 15 for the reporting period July 1 to December 31. All instances of deviation from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with 45CSR§30-4.4. The semi-annual monitoring reports shall be submitted in electronic format by e-mail to the following address:

DAQ:
DEPAirQualityReports@wv.gov

[45CSR§30-5.1.c.3.A.]

3.5.7. **Reserved.**

3.5.8. **Deviations.**

a. In addition to monitoring reports required by this permit, the permittee shall promptly submit supplemental reports and notices in accordance with the following:

1. Reserved.

2. Any deviation that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to the Secretary immediately by telephone or email. A written report of such deviation, which shall include the probable cause of such deviation, and any corrective actions or preventative measures taken, shall be submitted by the responsible official within ten (10) days of the deviation.

3. Deviations for which more frequent reporting is required under this permit shall be reported on the more frequent basis.

4. All reports of deviations shall identify the probable cause of the deviation and any corrective actions or preventative measures taken.

[45CSR§30-5.1.c.3.C.]

b. The permittee shall, in the reporting of deviations from permit requirements, including those attributable to upset conditions as defined in this permit, report the probable cause of such deviations and any corrective actions or preventive measures taken in accordance with any rules of the Secretary.
[45CSR§30-5.1.c.3.B.]

3.5.9. **New applicable requirements.** If any applicable requirement is promulgated during the term of this permit, the permittee will meet such requirements on a timely basis, or in accordance with a more detailed schedule if required by the applicable requirement.
[45CSR§30-4.3.h.1.B.]

3.6. Compliance Plan

3.6.1. Not Applicable.

3.7. Permit Shield

3.7.1. The permittee is hereby granted a permit shield in accordance with 45CSR§30-5.6. The permit shield applies provided the permittee operates in accordance with the information contained within this permit.

3.7.2. The following requirements specifically identified are not applicable to the source based on the determinations set forth below. The permit shield shall apply to the following requirements provided the conditions of the determinations are met.

a. Not Applicable.

4.0 Boilers [emission point ID(s): E5, E6]

4.1. Limitations and Standards

4.1.1. Visible emissions from each of the boiler stacks (E5, E6) shall not exceed ten (10) percent opacity based on a six-minute block average. *Compliance with this streamlined VE limit assures compliance with 40 CFR 60 Subpart Dc for E5*.
[45CSR§2-3.1.; 45CSR16; 40 CFR §60.43c(c)]

4.1.2. Reserved.

4.1.3. The addition of sulfur oxides to boiler B1's exit gas stream for the purpose of improving emissions control equipment efficiency is prohibited unless written approval for such addition is provided by the Secretary.
[45CSR§2-4.4.]

4.1.4. Any fuel burning unit(s) including associated air pollution control equipment, shall at all times, including periods of start-up, shutdowns, and malfunctions, to the extent practicable, be maintained and operated in a manner consistent with good air pollution control practice for minimizing emissions.
[45CSR§2-9.2.; 45CSR16; 40 CFR §60.11(d)]

4.1.5. No owner or operator of an affected facility that combusts wood shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 0.10 lb/MMBtu heat input if the affected facility has an annual capacity factor for wood greater than 30 percent. The PM standard applies at all times except during periods of startup, shutdown, or malfunction. (*E5*)
[45CSR16; 40 CFR §§60.43c(b) and (d)]

4.1.6. Emissions from the wood fired boiler (B1) shall not exceed the following:

Pollutant	lbs/hr	TPY
TSP/PM_{10}/$PM_{2.5}$*	1.03	4.28
SO_2**	1.56	6.50
CO	20.25	84.27
NO_X	33.24	138.30
VOC	1.08	4.51
Lead	0.01	0.01
Acetaldehyde	0.06	0.22
Acrolein	0.25	1.00
Benzene	0.26	1.10
Carbon Tetrachloride	0.01	0.02
Chlorine	0.05	0.21
Dichloromethane	0.02	0.08

Pollutant	lbs/hr	TPY
Formaldehyde	0.28	1.10
Hydrogen Chloride	1.20	4.90
Manganese	0.10	0.42
Naphthalene	0.01	0.03
Phenol	0.01	0.02
Propionaldehyde	0.01	0.02
Styrene	0.12	0.49
Toluene	0.06	0.24
Total HAPs	2.42	10.05

* *Compliance with these streamlined PM limits assures compliance with 45CSR§2-4.1.2.*

** *Compliance with these streamlined SO_2 limits assures compliance with 45CSR§10-3.3.6.*

[45CSR13 – Permit R13-2192 §4.1.7.]

4.1.7. Emissions from the gas fired boiler (B2) shall not exceed the following:

Pollutant	lbs/hr	TPY
$TSP/PM_{10}/PM_{2.5}$*	0.27	1.11
SO_2**	0.02	0.09
CO	0.02	0.10
NO_X	5.97	24.83
VOC	0.19	0.80
Hexane	0.07	0.26
Formaldehyde	0.01	0.02
Total HAPs	0.07	0.27

* *Compliance with these streamlined PM limits assures compliance with 45CSR§2-4.1.2.*

** *Compliance with these streamlined SO_2 limits assures compliance with 45CSR§10-3.3.6.*

[45CSR13 – Permit R13-2192 §4.1.8.]

4.1.8. Compliance with the allowable sulfur dioxide emission limitations shall be based on a continuous twenty-four (24) hour averaging time. Emissions shall not be allowed to exceed the weight emissions standards for sulfur dioxide as set forth in 45CSR10, except during one (1) continuous twenty-four (24) hour period in each calendar month. During this one (1) continuous twenty-four hour period, emissions shall not be allowed to exceed such weight emission standards by more than ten percent (10%) without causing a violation of 45CSR10. A continuous twenty-four (24) hour period is defined as one (1) calendar day.
[45CSR§10-3.8.]

4.1.9. No person shall cause, suffer, allow or permit any source of fugitive particulate matter to operate that is not equipped with a fugitive particulate matter control system. This system shall be operated and maintained in such a manner as to minimize the emission of fugitive particulate matter. Sources of fugitive particulate matter associated with fuel burning units shall include, but not be limited to, the following:

a. Stockpiling of ash or fuel either in the open or in enclosures such as silos;

b. Transport of ash in vehicles or on conveying systems, to include spillage, tracking or blowing of particulate matter from or by such vehicles or equipment; and

c. Ash or fuel handling systems and ash disposal areas.

[45CSR§2-5.1.]

4.1.10. Reserved.

4.1.11. The permittee shall conduct a tune-up of the boiler B1 biennially as specified in 40 CFR §63.11223. **[45CSR13 – Permit R13-2192 §4.1.17.; 45CSR34; 40 CFR §63.11201(b) and Table 2, Item 6 of 40 CFR 63, Subpart JJJJJJ]**

4.1.12. Reserved.

4.1.13. The annual heat input to Boiler B1 shall not exceed 520,125 MMBtu/yr based on a rolling 12 month total. **[45CSR13 – Permit R13-2192 §4.1.19.]**

4.1.14. The annual heat input to Boiler B2 shall not exceed 313,739 MMBtu/yr based on a rolling 12 month total. **[45CSR13 – Permit R13-2192 §4.1.20.]**

4.1.15. The permittee must demonstrate continuous compliance with the work practice and management practice standards as follows:

a. For affected sources subject to the work practice standard or the management practices of a tune-up, the permittee must conduct a performance tune-up according to paragraph b. of this section and keep records as required in condition 4.4.5. to demonstrate continuous compliance. The permittee must conduct the tune-up while burning the type of fuel (or fuels in the case of boilers that routinely burn two types of fuels at the same time) that provided the majority of the heat input to the boiler over the 12 months prior to the tune-up.

b. Except as specified in paragraphs 40 CFR §§63.11223(c) through (f), the permittee must conduct a tune-up of the boiler biennially to demonstrate continuous compliance as specified in paragraphs b.1. through 7. of this section. Each biennial tune-up must be conducted no more than 25 months after the previous tune-up. For a new or reconstructed boiler, the first biennial tune-up must be no later than 25 months after the initial startup of the new or reconstructed boiler.

1. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the permittee may delay the burner inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection). Units that produce electricity for sale may delay the burner inspection until the first outage, not to exceed 36 months from the previous inspection.

2. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.

3. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the permittee may delay the inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection.

4. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any nitrogen oxide requirement to which the unit is subject.

5. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.

6. Maintain on-site and submit, if requested by the Administrator, a report containing the information in paragraphs b.6.i. through iii. of this section.

   i. The concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler.

   ii. A description of any corrective actions taken as a part of the tune-up of the boiler.

   iii. The type and amount of fuel used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit.

7. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of startup.

[45CSR34; 40 CFR §§63.11223(a) and (b)]

4.2. Monitoring Requirements

4.2.1. A continuous opacity monitoring system (COMS) for measuring the opacity of the emissions discharged to the atmosphere from boiler B1 (E5) shall be utilized, calibrated, maintained, and the output of the system shall be recorded. All COMS for measuring opacity shall be operated in accordance with the applicable procedures under Performance Specification 1 of Appendix B of 40 CFR Part 60. The span value of the opacity COMS shall be between 60 and 80 percent.
[45CSR§2-3.2.; 45CSR16; 40 CFR §§60.47c(a) and (b)]

4.2.2. Compliance with the visible emission requirements for boiler B2 (E6) shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 22 once a month. Visible emissions shall be observed using Method 22 for at least one (1) minute. If visible emissions are observed, the permittee shall conduct a Method 9 reading unless the cause for the visible emissions is corrected within 24 hours.
[45CSR§2-3.2.; 45CSR§30-5.1.c.]

4.2.3. Compliance with the CO, NO_X, and VOC emission limitations established for the Hogged Fuel Boiler (E5) and the Natural Gas Boiler (E6), shall be demonstrated as follows:

a. The permittee shall operate an oxygen monitor to measure the oxygen content of the Hogged Fuel Boiler (E5) exhaust. Unless a different range for the oxygen content is established through testing that is requested to be performed by the Secretary or a duly authorized representative of the Secretary, which demonstrates compliance with the CO, NO_X, and VOC emission limitations, the oxygen content shall be maintained within the design specifications indicated below. If a new parameter range is established through such testing for each pollutant, the permit must be revised to reflect the new established range.

1. The boiler exhaust oxygen content shall range between 1% and 20%.

2. The oxygen content shall be recorded once every 12 hours during boiler operation.

3. If a test is requested to be performed by the Secretary, a report, including the measured oxygen content during the required source test, measured oxygen content for at least three months of operation, and proposed oxygen content range for the boiler shall be submitted to the Director within sixty (60) days of completing the test. The oxygen content range shall not apply to periods of start-up, shut down, or idle (less than 10,000 pounds of steam per hour) conditions.

b. Continual compliance with the Natural Gas Boiler (E6) CO and NO_X emission limitations shall be demonstrated by means required in 4.4.1.b. of this permit.

[45CSR§30-5.1.c.]

4.3. Testing Requirements

4.3.1. Compliance with the particulate matter emission limitations established for the Hogged Fuel Boiler B1 (E5) shall be demonstrated as follows:

a. Stack testing shall be performed in accordance with 40 CFR §60.45c and 45CSR2 Appendix "Compliance Test Procedures for 45CSR2," or alternative method approved by the Director, once per permit term and/or within five years of the most recent successful tests. Results from such testing shall be submitted to the Director within sixty (60) days from the date of completion of said testing;

b. The permittee shall monitor and record the following parameters for the Hogged Fuel Boiler B1 (E5):

1. Operating secondary voltage on the ESP of 28 to 55 Kilovolts.

2. Operating secondary current on the ESP of 0 to 250 milliamps.

3. Monitored parameters will be recorded once every 24 hours when the unit is operating.

These parameters shall be maintained within the design specifications as indicated above. If different ranges for the parameters that demonstrate compliance with the particulate matter emission limitation are established through testing under 4.3.1.a., the permit must be revised to reflect the new ranges.

[45CSR§30-5.1.c.]

4.3.2. At least once every 5 years, the permittee shall perform or have performed EPA approved testing to demonstrate compliance with the VOC and Total HAP emission limits of condition 4.1.6.
[45CSR13 – Permit R13-2192 §4.2.1.]

4.4. Recordkeeping Requirements

4.4.1. Compliance with the lead and sulfur dioxide emissions limitations established for the Hogged Fuel Boiler B1 (E5) and the particulate matter, sulfur dioxide and VOC emissions limitations established for the Natural Gas Boiler B2 (E6) shall be demonstrated as follows:

a. Demonstrate that wood was used as the only fuel in the Hogged Fuel Boiler B1 (E5).

b. Demonstrate that natural gas was used as the only fuel in the Natural Gas Boiler B2 (E6).

c. Continual compliance with the particulate matter, sulfur dioxide, and VOC emission limitations for the Natural Gas Boiler B2 (E6) shall be demonstrated by maintaining records required in 4.4.2.a.

[45CSR§30-5.1.c.]

4.4.2. Records of the operating schedule and the quality and quantity of fuel burned in each fuel burning unit shall be maintained as specified below:

a. For fuel burning unit(s) which burn only pipeline quality natural gas, such records shall include, but not be limited to, the date and time of start-up and shutdown, and the quantity of fuel consumed on a monthly basis. (*E6*)

b. For fuel burning unit(s) which burn only wood, such records shall include, but not be limited to, the date and time of start-up and shutdown, the quantity of fuel consumed on a daily basis and a quarterly ash and BTU analysis. (*E5*)

[45CSR§2-8.3.3.; 45CSR§2A-7.1.; 45CSR16; 40 CFR §60.48c(g)]

4.4.3. In order to determine compliance with the annual heat input limit of 4.1.13., the permittee shall keep monthly records of the total heat input to boiler B1.
[45CSR13 – Permit R13-2192 §4.3.10.]

4.4.4. In order to determine compliance with the annual heat input limit of 4.1.14., the permittee shall keep monthly records of the total heat input to boiler B2.
[45CSR13 – Permit R13-2192 §4.3.11.]

4.4.5. The permittee must comply with the following recordkeeping requirements from 40 CFR 63, Subpart JJJJJJ:

a. The permittee must maintain the records specified in paragraphs a.1. through 4. of this section.

1. As required in 40 CFR §63.10(b)(2)(xiv), the permittee must keep a copy of each notification and report submitted to comply with Subpart JJJJJJ and all documentation supporting any Initial Notification or Notification of Compliance Status submitted.

2. The permittee must keep records to document conformance with the work practices, emission reduction measures, and management practices required by 40 CFR §63.11214 and 40 CFR §63.11223 as specified in paragraphs a.2.i. through iii. of this section.

i. Records must identify each boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned.

ii. For operating units that combust non-hazardous secondary materials that have been determined not to be solid waste pursuant to 40 CFR §241.3(b)(1) of this chapter, the permittee must keep a record which documents how the secondary material meets each of the legitimacy criteria under 40 CFR §241.3(d)(1). If combusting a fuel that has been processed from a discarded non-hazardous secondary material pursuant to 40 CFR §241.3(b)(4), the permittee must keep records as to how the operations that produced the fuel satisfies the definition of processing in 40 CFR §241.2 and each of the legitimacy criteria in 40 CFR §241.3(d)(1). If the fuel received a non-waste determination pursuant to the petition process submitted under 40 CFR §241.3(c), the permittee must keep a record that documents how the fuel satisfies the requirements of the petition process. For operating units that combust non-hazardous secondary materials as fuel per 40 CFR §241.4, the permittee must keep records documenting the material is a listed non-waste under 40 CFR §241.4(a).

iii. For each boiler required to conduct an energy assessment, the permittee must keep a copy of the energy assessment report.

3. Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment.

4. 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), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation.

b. The records must be in a form suitable and readily available for expeditious review. The permittee must keep each record for 5 years following the date of each recorded action. The permittee must keep each record on-site or be accessible from a central location by computer or other means that instantly provide access at the site for at least 2 years after the date of each recorded action. The permittee may keep the records off site for the remaining 3 years.

[45CSR34; 40 CFR §§63.11225(c)(1), (c)(2), (c)(2)(i) to (c)(2)(iii), (c)(4), (c)(5), and (d)]

4.5. Reporting Requirements

4.5.1. Any malfunction of boiler B1 and/or boiler B2 or their air pollution control equipment, which results in any excess particulate matter emission rate or excess opacity, shall be reported to the Secretary as provided in one of the following:

a. Excess opacity periods meeting the following conditions may be reported on a quarterly basis unless otherwise required by the Secretary:

1. The excess opacity period does not exceed thirty (30) minutes within any 24-hour period; and

2. Excess opacity does not exceed 40%.

b. The owner or operator shall report to the Secretary any malfunction resulting in excess particulate matter or excess opacity, not meeting the criteria set forth in 4.5.1.a. above (45CSR§2-9.3.1.), by telephone or e-mail by the end of the next business day after becoming aware of such condition. The owner or operator shall file a certified written report concerning the malfunction with the Secretary within thirty (30) days providing the following information:

1. A detailed explanation of the factors involved or causes of the malfunction;

2. The date and time of duration (with starting and ending times) of the period of excess emissions;

3. An estimate of the mass of excess emissions discharged during the malfunction period;

4. The maximum opacity measured or observed during the malfunction;

5. Immediate remedial actions taken at the time of the malfunction to correct or mitigate the effects of the malfunction; and

6. A detailed explanation of the corrective measures or program that will be implemented to prevent a recurrence of the malfunction and a schedule for such implementation.

[45CSR§2-9.3.]

4.5.2. The owner or operator of each affected facility subject to the PM or opacity limits of 40 CFR §60.43c shall submit to the Administrator the performance test data from the initial and any subsequent performance tests. (*E5*)
[45CSR16; 40 CFR §60.48c(b)]

4.5.3. The owner or operator of each wood-fired affected facility subject to the opacity limits under 40 CFR §60.43c(c) shall submit excess emission reports for any excess emissions from the affected facility which occur during the reporting period. (*E5*)
[45CSR16; 40 CFR §60.48c(c)]

4.5.4. The reporting period for the reports required under 40 CFR Part 60 Subpart Dc is each six-month period. All reports shall be submitted to the Administrator and Director and shall be postmarked by the 30th day following the end of the reporting period. (*E5, E6*)
[45CSR16; 40 CFR §60.48c(j)]

4.5.5. The permittee must prepare, by March 1 of each year, and submit to the delegated authority upon request, an annual compliance certification report for the previous calendar year containing the information specified in paragraphs a. through b. of this section. For boilers that are subject only to the energy assessment requirement and/or a requirement to conduct a biennial or 5-year tune-up according to 40 CFR §63.11223(a) and not subject to emission limits or operating limits, the permittee may prepare only a biennial or 5-year compliance report as specified in paragraphs a. and b. of this section.

a. Company name and address.

b. Statement by a responsible official, with the official's name, title, phone number, email address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of 40 CFR Part 63 Subpart JJJJJJ. The notification must include the following certification(s) of compliance, as applicable, and signed by a responsible official:

1. "This facility complies with the requirements in 40 CFR §63.11223 to conduct a biennial or 5-year tune-up, as applicable, of each boiler."

2. For units that do not qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act: "No secondary materials that are solid waste were combusted in any affected unit."

3. "This facility complies with the requirement in 40 CFR §§63.11214(d) and 63.11223(g) to minimize the boiler's time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available."

[45CSR34; 40 CFR §§63.11225(b), (b)(1), and (b)(2)]

4.6. Compliance Plan

4.6.1. Not Applicable

5.0 Door Skin Manufacturing [emission point ID(s): E1-E6, E10, E12-18]

5.1. Limitations and Standards

5.1.1. The permittee shall use only a no added Formaldehyde (NAF) resin with a maximum 0% Formaldehyde by weight.
[45CSR13 – Permit R13-2192 §4.1.1.]

5.1.2. Maximum Furnish Dryer Throughput shall not exceed 23,942 oven dried pounds per hour nor 47,500 oven dried tons per year.
[45CSR13 – Permit R13-2192 §4.1.2.]

5.1.3. Maximum production of Door Skins shall not exceed 21,591 square feet per hour nor 179,683,869 square feet per year based on a $1/8^{th}$ inch basis.
[45CSR13 – Permit R13-2192 §4.1.3.]

5.1.4. Maximum production of Hogged Door Skins shall not exceed 10,796 square feet per hour nor 26,952,580 square feet per year based on a $1/8^{th}$ inch basis.
[45CSR13 – Permit R13-2192 §4.1.4.]

5.1.5. Maximum primer usage shall not exceed 71.0 gallons per hour nor 534,560 gallons per year.
[45CSR13 – Permit R13-2192 §4.1.5.]

5.1.6. Emissions from the Biofilter (E18) controlling HAP emissions from the Fiber Dryer (D1) and Press Vents (PV) shall not exceed the following:

Pollutant	lbs/hr	TPY
$PM/PM_{10}/PM_{2.5}$*	0.17	0.34
VOC	29.11	64.45
CO	1.68	7.00
NO_X	1.96	8.18
Acetaldehyde	0.02	0.06
Acrolein	0.02	0.07
Benzene	0.02	0.07
Formaldehyde	0.01	0.05
Methanol	0.09	0.37
Phenol	0.04	0.17
Propionaldehyde	0.02	0.09
MDI	0.01	0.01
HAPs from NG Burner	0.03	0.14

Pollutant	lbs/hr	TPY
Total HAPs	0.21	0.90

** Compliance with this streamlined PM limit assures compliance with the 45CSR§7-4.1. PM limit.*

[45CSR13 – Permit R13-2192 §4.1.6.; 45CSR§7-4.1.]

5.1.7. Emissions from the Rotary Valve (E16) shall not exceed the following:

Pollutant	lbs/hr	TPY
PM*	2.35	4.66
$PM_{10}/PM_{2.5}$	0.59	1.16
VOC	0.81	1.60
Acetaldehyde	0.01	0.01
Acrolein	0.13	0.26
Formaldehyde	0.01	0.02
Methanol	0.39	0.77
Phenol	0.01	0.01
Propionaldehyde	0.01	0.01
Total HAPs	0.54	1.07

** Compliance with this streamlined PM limit assures compliance with the 45CSR§7-4.1. PM limit.*

[45CSR13 – Permit R13-2192 §4.1.9.; 45CSR§7-4.1.]

5.1.8. Emissions from the baghouses shall not exceed the following:

Source	PM*		PM_{10}		VOC/HAPs	
	lbs/hr	TPY	lbs/hr	TPY	lbs/hr	TPY
Former BH (BH2)	0.91	1.75	0.91	1.75	0.21	0.85
Waste BH (BH3)	0.37	0.69	0.37	0.69	0.20	0.82
Sizer BH (BH4)	6.11	4.22	6.11	4.22	0.23	0.16
Total	7.39	6.66	7.39	6.66	0.64	1.83

** Compliance with these streamlined PM limits assures compliance with the 45CSR§7-4.1. PM limits.*

[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1.]

5.1.9. Emissions from the Primeline Ovens (E13) shall not exceed the following:

Pollutant	lbs/hr	TPY
$PM/PM_{10}/PM_{2.5}$*	0.03	0.11
VOC	0.02	0.08
CO	0.30	1.23
NO_X	0.35	1.47
SO_2	0.01	0.01
Hexane	0.01	0.03
Total HAPs	0.01	0.03

** Compliance with this streamlined PM limit assures compliance with the 45CSR§7-4.1. PM limit.*

[45CSR13 – Permit R13-2192 §4.1.11.; 45CSR§7-4.1.]

5.1.10. Emissions from the Primeline Paint Booth (E14) shall not exceed the following:

Pollutant	lbs/hr	TPY
$PM/PM_{10}/PM_{2.5}$*	0.59	2.22
VOC	21.31	80.18
Total HAPs	0.18	0.67
Styrene	0.03	0.09
Methyl Methacrylate	0.01	0.02
Formaldehyde	0.01	0.04
Glycol Ether	0.13	0.49

** Compliance with this streamlined PM limit assures compliance with the 45CSR§7-4.1. PM limit.*

[45CSR13 – Permit R13-2192 §4.1.12.; 45CSR§7-4.1.]

5.1.11. Emissions from the Coating Manufacturing (E15) shall not exceed the following:

Ingredient	$PM/PM_{10}/PM_{2.5}$*		Glycol Ether		VOCs	
	lbs/hr	TPY	lbs/hr	TPY	lbs/hr	TPY
Dispersing Agent			--	--	0.05	0.08
Fungicide			0.01	0.02	0.02	0.03
Polymer			0.01	0.01	0.01	0.01

Ingredient	PM/PM_{10}/$PM_{2.5}$*		Glycol Ether		VOCs	
	lbs/hr	TPY	lbs/hr	TPY	lbs/hr	TPY
Glycol Ether			0.32	0.56	0.32	0.56
Alkyl			--	--	0.03	0.05
Solution			--	--	0.13	0.23
Total	0.01	0.02	0.34	0.59	0.56	0.96

** Compliance with the streamlined PM limit assures compliance with the 45CSR§7-4.1. PM limit.*

[45CSR13 – Permit R13-2192 §4.1.13.; 45CSR§7-4.1.]

5.1.12. Emissions from the Die Coating (E17) shall not exceed the following:

Material	Total VOC		DEGMBE		Methanol		Total HAPs	
	lbs/hr	TPY	lbs/hr	TPY	lbs/hr	TPY	lbs/hr	TPY
Cleaner/Degreaser	0.18	0.10	0.13	0.07	--	--	0.13	0.07
Isopropyl Alcohol	1.42	0.70	--	--	--	--	--	--
Die Coating	0.72	0.40	--	--	0.13	0.06	0.13	0.06
Total	2.32	1.2	0.13	0.1	0.13	0.1	0.26	0.13

[45CSR13 – Permit R13-2192 §4.1.14.]

5.1.13. Maximum sodium bicarbonate usage in the die cleaning operation shall not exceed 22 tons per year based on a 12 month rolling yearly total.
[45CSR13 – Permit R13-2192 §4.1.15.]

5.1.14. Reserved.

5.1.15. No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any process source operation which is greater than twenty (20) percent opacity.
[45CSR§7-3.1.]

5.1.16. No person shall cause, suffer, allow or permit visible emissions from any storage structure(s) associated with any manufacturing process(es) that pursuant to 45CSR§7-5.1. is required to have a full enclosure and be equipped with a particulate matter control device. (*E2, E3*)
[45CSR§7-3.7.]

5.1.17. Any stack serving any process source operation or air pollution control equipment on any process source operation shall contain flow straightening devices or a vertical run of sufficient length to establish flow patterns consistent with acceptable stack sampling procedures.
[45CSR§7-4.12.]

5.2. Monitoring Requirements

5.2.1. In order to determine compliance with the HAP and VOC emission limit on emission points E14 and E15 in conditions 5.1.10. and 5.1.11. of this permit, the permittee shall monitor and record the amount and VOC/HAP content of the primer, polymer and all coating manufacturing raw materials used.
[45CSR13 – Permit R13-2192 §4.3.7.]

5.2.2. In order to determine compliance with the VOC and HAP emission limit on emission point E17 in condition 5.1.12. of this permit, the permittee shall monitor and record the amount and HAP/VOC content of the die coating used.
[45CSR13 – Permit R13-2192 §4.3.8.]

5.2.3. The permittee shall operate and maintain baghouses and the permittee shall conduct a quarterly visual inspection of the bags, bag connections, and dust hoppers of baghouses BH1a, BH1b, BH1c, BH2, BH3, and BH4 in order to ensure proper operation of the baghouses. Records shall state the date and time of each baghouse inspection, the inspection results, and corrective actions taken, if any.
[45CSR§30-5.1.c.; 40 CFR §64.6(c)]

5.2.4. Differential pressure readings (pressure drop) across baghouses BH1a, BH1b, BH1c, BH2, BH3, and BH4 shall be taken and manually recorded on a daily basis. Any pressure drop reading less than 0.2 inches of water or greater than 4.0 inches of water is defined as an excursion per the 40 CFR 64 CAM Plan. The observer shall be familiar with the pressure drop operating range and the proper operation of the baghouse and will inspect the pressure gauges for proper operation.
[45CSR§30-5.1.c.; 40 CFR §64.6(c)]

5.2.5. At all times that the Press Vents (PV) and/or Fiber Dryer (D1) are in operation, the biofilter bed temperature shall be monitored via a thermocouple with a minimum accuracy of ±0.27°F located in the treatment media. The temperature data shall be monitored and electronically recorded at 15-minute intervals. The permittee shall determine the 24-hour block average of all recorded readings, calculated after every 24 hours of operation as the average of the evenly spaced recorded readings in the previous 24 operating hours (see also Condition 5.2.7.).

Any 24-hour block average of the biofilter bed temperature that is less than 81°F or greater than 135°F shall be defined as an excursion per the CAM Plan under 40 CFR 64.

[45CSR§30-5.1.c.; 40 CFR §64.6(c)]

5.2.6. **Proper maintenance.** At all times, the owner or operator shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.
[45CSR§30-5.1.c.; 40 CFR §64.7(b)]

5.2.7. **Continued operation.** Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring

malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.
[45CSR§30-5.1.c.; 40 CFR §64.7(c)]

5.2.8. **Response to excursions or exceedances.**

a. Upon detecting an excursion or exceedance, the permittee shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

b. Determination of whether the owner or operator has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

[45CSR§30-5.1.c.; 40 CFR §64.7(d)]

5.2.9. **Documentation of need for improved monitoring.** After approval of monitoring under this part, if the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the part 70 or 71 permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.
[45CSR§30-5.1.c.; 40 CFR §64.7(e)]

5.2.10. **Quality Improvement Plan (QIP)**. Based on the results of the determination made under Condition 5.2.8.b., the Administrator or the permitting authority may require the permittee to develop and implement a QIP. If required, the QIP shall be developed and implemented in accordance with 40 C.F.R. §§64.8(b) through (e).
[45CSR§30-5.1.c.; 40 CFR §64.8]

5.3. Testing Requirements

5.3.1. Compliance with the visible emission requirements for the process source operations emission points E4, E10, E12, & E18 shall be determined by conducting weekly Method 22-like visible emission checks and for the process source operations emission points E2, E3, E13, & E14 monthly Method 22-like visible emission checks. At a minimum, the observer must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water

(condensing water vapor) on the visibility of emissions. This training may be obtained from written materials found in the References 1 and 2 from 40 CFR Part 60, Appendix A, Method 22 or from the lecture portion of the 40 CFR Part 60, Appendix A, Method 9 certification course.

The visible emission check shall be performed during periods of normal facility operation and appropriate weather conditions and for a sufficient time interval, but no less than one (1) minute, to determine if any visible emissions are present.

If visible emissions are present during these checks or at any other time, compliance shall be determined by conducting tests in accordance with 45CSR§§7A-2.1.a. and 2.1.b. Visible emissions greater than 20 percent opacity is defined as an excursion per the 40 CFR 64 CAM Plan for emission points E4, E10, E12, & E18.

[45CSR§7A-2.1.; 45CSR§30-5.1.c.; 40 CFR §64.6(c)]

5.3.2. At least once every 5 years, the permittee shall perform or have performed EPA approved testing to demonstrate compliance with the VOC, Methanol, and Total HAP emission limits of condition 5.1.6.

For the purposes of CAM, an exceedance of the Methanol and/or aggregate HAP emissions limits occurs if the arithmetic mean of the results of the three test runs surpasses the respective emission limit.

[45CSR13 – Permit R13-2192 §4.2.1.; 45CSR§30-5.1.c.; 40 CFR §64.6(c)]

5.4. Recordkeeping Requirements

5.4.1. In order to determine compliance with Section 5.1.1. of this permit, the permittee shall keep records of the type and amount of resin used on a monthly basis.
[45CSR13 – Permit R13-2192 §4.3.4.]

5.4.2. In order to determine compliance with the production limits set forth in Sections 5.1.2., 5.1.3., and 5.1.4. of this permit, the permittee shall keep records of the hours of operation and the amount of production.
[45CSR13 – Permit R13-2192 §4.3.5.]

5.4.3. In order to determine compliance with the usage limits set forth in Section 5.1.5. of this permit, the permittee shall keep records of the amount of primer used on a monthly basis.
[45CSR13 – Permit R13-2192 §4.3.6.]

5.4.4. For CAM, the owner or operator shall comply with the recordkeeping requirements of permit conditions 3.4.1. and 3.4.2. The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 40 CFR §64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under 40 CFR Part 64 (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).
[45CSR§30-5.1.c.; 40 CFR §64.9(b)]

5.4.5. To determine compliance with the usage limit set forth in Section 5.1.13. of this permit, the permittee will keep monthly records of the amount of sodium bicarbonate used at the die cleaning operation.
[45CSR13 – Permit R13-2192 §4.3.9.]

5.5. Reporting Requirements

5.5.1. For CAM, monitoring reports shall be submitted to the director and at a minimum shall include and be in accordance with information in permit conditions 3.5.6. and 3.5.8. as applicable. Also, at a minimum, the following information, as applicable, shall be included:

a. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;

b. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

c. A description of the actions taken to implement a QIP during the reporting period as specified in 40 CFR §64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

[45CSR§30-5.1.c.; 40 CFR §64.9(a)]

5.6. Compliance Plan

5.6.1. Not Applicable

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit Renewal - CAM Plan for Biofilter - JELD-WEN, Inc.

Randy Taylor <RTaylor@jeldwen.com> Tue, Aug 20, 2024 at 2:01 PM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>
Cc: Eric Rapp <ERapp@jeldwen.com>, Amanda Dean <ADean@jeldwen.com>

Good afternoon Sarah,
This is the information you requested for the monitoring criteria of the biofilter bed temperature. Please let us know if you have any questions.

1) Indicator Range: What is the basis for the 81°F to 135°F temperature range? How was this range selected/calculated?

The temperature range was based on temperatures observed during prior source testing events on the biofilter. The range includes the current PCWP MACT 10% allowance the on each side (minimum and maximum) of the range.

2) Representative Data: Please provide more details about the thermocouples used to monitor the temperature. How many thermocouples are being used? Where are the thermocouples located (are any located at the inlet, outlet, etc.)? What is the minimum accuracy of the thermocouples?

Temperatures are sourced from a single thermocouple located in the bed (treatment media) and have a minimum accuracy of +/- 0.27°F.

3) QA/QC Practices: How often are the thermocouple calibrations conducted?

Thermocouples are calibrated semi-annually.

4) Monitoring Frequency/Data Collection: Do the thermocouples monitor the temperature continuously? How often is the temperature data collected/recorded for the calculation of the 24-hour block average (every 15-minutes, every hour, etc.)?

The thermocouple monitors continuously on 15-minute intervals and temperatures are averaged accordingly to generate the 24 hour block average.

Thanks,

Randy Taylor, ASP | EHS Manager

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Thursday, August 15, 2024 8:24 AM
To: Randy Taylor <rtaylor@jeldwen.com>
Subject: Title V Permit Renewal - CAM Plan for Biofilter - JELD-WEN, Inc.

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit Renewal - CAM Plan for Biofilter - JELD-WEN, Inc.

Barron, Sarah K <sarah.k.barron@wv.gov> Thu, Aug 15, 2024 at 8:24 AM
To: Randy Taylor <rtaylor@jeldwen.com>

Hi Randy,

After review of the CAM Plan for the biofilter, further information is needed for the monitoring criteria of the biofilter bed temperature.

1) Indicator Range: What is the basis for the 81°F to 135°F temperature range? How was this range selected/calculated?

2) Representative Data: Please provide more details about the thermocouples used to monitor the temperature. How many thermocouples are being used? Where are the thermocouples located (are any located at the inlet, outlet, etc.)? What is the minimum accuracy of the thermocouples?

3) QA/QC Practices: How often are the thermocouple calibrations conducted?

4) Monitoring Frequency/Data Collection: Do the thermocouples monitor the temperature continuously? How often is the temperature data collected/recorded for the calculation of the 24-hour block average (every 15-minutes, every hour, etc.)?

Please let me know if you'd like to discuss the CAM Plan further.

Thanks,
- Sarah

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Sarah Barron
Engineer Trainee
West Virginia Department of Environmental Protection
Division of Air Quality
(304) 414-1915
sarah.k.barron@wv.gov

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Thu, Jul 11, 2024 at 10:35 AM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Good morning Sarah,

I spoke with Eric and the 2023 emissions would be best based on the current AP-42 emission factors as reference in the current permit application. In this case, the Dichloromethane emissions would equate to .03 TPY based on the AP-42 emission factor of 0.00029 lb/MMBtu and annual heat input of 222,797 MMBtu/yr. The associated emissions tables/forms are currently being adjusted and will be reflected accordingly in the NSR Class II Administrative Update application.

Thanks,

Randy Taylor, ASP | EHS Manager

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Tuesday, July 9, 2024 8:05 AM
To: Randy Taylor <RTaylor@jeldwen.com>
Subject: Re: Fw: Fw: Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy,
[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Tue, Jul 9, 2024 at 8:05 AM
To: Randy Taylor <RTaylor@jeldwen.com>

Randy,

Thanks for sending these. I had also spoken with Eric on the phone last week about the 2023 actual emissions of Dichloromethane. Do you have an updated calculation of the actual Dichloromethane emissions that is not based on the emission factor from the 2019 performance test?

Thanks,
- Sarah

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Tue, Jul 2, 2024 at 3:16 PM
To: Sarah K Barron <sarah.k.barron@wv.gov>

Hi Sarah,

We appreciate you taking the time to discuss our permit questions. I've attached the, Attachment G: Air Pollution Control Device Form and the Attachment H: CAM Plan Form for the Biofilter as requested, also the Biofilter emissions will be updated and reflected in the upcoming NSR Class II Administrative Update / Title V Modification.

Thank you,

Randy Taylor, ASP | EHS Manager

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Wednesday, June 26, 2024 11:48 AM
To: Randy Taylor <RTaylor@jeldwen.com>
Subject: Re: Fw: Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy,
[Quoted text hidden]

2 attachments

AttG Biofilter (2024-06) (2).doc
53K

AttH CAM Plan BF (2024-06)(1).doc
146K

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BF	**List all emission units associated with this control device.** Press Vents (PV), Fiber Dryer (D1), Dryer Cyclone (C1)	
Manufacturer: MET-PRO	**Model number:** High Temp Biofilter	**Installation date:** 08/23/2013

Type of Air Pollution Control Device:

___ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	_X_ Other (describe) _Biofilter___
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Design inlet gas flow rate: 100,000 ACFM @125^{o}F
- Average inlet gas flow rate: 72,000 ACFM @125^{o}F
- Inlet gas velocity: 4,211 ft/sec
- Designed Liquid flow rate : Trickle Filter – 668 gpm; Biobed – 75 gpm

Is this device subject to the CAM requirements of 40 C.F.R. 64? _X_Yes _ _ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.
The facility will monitor bed temperatures and demonstrate compliance with prescribed limits through source testing on the schedule in the Title V permit and NSR permit(s).

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

For definitions and information about the CAM rule, please refer to 40 CFR Part 64. Additional information (including guidance documents) may also be found at http://www.epa.gov/ttn/emc/cam.html

CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to **EACH** regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet **all** of the following criteria (*If No, then the remainder of this form need not be completed*): ☒ YES ☐ NO

a. The PSEU is located at a major source that is required to obtain a Title V permit;

b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is NOT exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
- Stratospheric Ozone Protection Requirements.
- Acid Rain Program Requirements.
- Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
- An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).

c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;

d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND

e. The PSEU is NOT an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

☒ RENEWAL APPLICATION. **ALL** PSEUs for which a CAM plan has NOT yet been approved need to be addressed in this CAM plan submittal.

☐ INITIAL APPLICATION (submitted after 4/20/98). **ONLY** large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.

☐ SIGNIFICANT MODIFICATION TO LARGE PSEUs. **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, Only address the appropriate monitoring requirements affected by the significant modification.

3) [a] BACKGROUND DATA AND INFORMATION					
Complete the following table for **all** PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU In order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.					
PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	[b] EMISSION LIMITATION or STANDARD	[c] MONITORING REQUIREMENT
Press Vents (PV), Fiber Dryer (D1) & Dryer Cyclone (C1)	Press Vents, Fiber Dryer	HAPs	Biofilter	45CSR13 – Permit R13-2192 §4.1.6	Biofilter bed temperature tracking and source testing
Press Vents (PV), Fiber Dryer (D1) & Dryer Cyclone (C1)	Press Vents, Fiber Dryer	Methanol	Biofilter	45CSR13 – Permit R13-2192 §4.1.6	Biofilter bed temperature tracking and source testing
EXAMPLE Boiler No. 1	Wood-Fired Boiler	PM	Multiclone	45CSR§2-4.1.c.; 9.0 lb/hr	Monitor pressure drop across multiclone: Weekly inspection of multiclone

[a] If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

[b] Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

[c] Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

CAM MONITORING APPROACH CRITERIA

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for EACH indicator selected for EACH PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. if more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.

4a) PSEU Designation: Press Vents (PV), Fiber Dryer (D1)	**4b) Pollutant:** HAPs	**4c) [a] Indicator No. 1:** Bed Temperature	**4d) [a] Indicator No. 2:** **Source Testing**
5a) GENERAL CRITERIA Describe the MONITORING APPROACH used to measure the indicators:		Bed temperature	Source Testing
[b] Establish the appropriate INDICATOR RANGE or the procedures for establishing the indicator range which provides a reasonable assurance of compliance:		81°F - 135°F	Limits prescribed in Title V permit (Condition 5.1.6) and NSR permit (Condition 4.1.6)
5b) PERFORMANCE CRITERIA Provide the SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA, such as detector location, installation specifications, and minimum acceptable accuracy:		Biofilter thermocouples located within bed unit	Source testing equipment and approved methods
[c] For new or modified monitoring equipment, provide VERIFICATION PROCEDURES, including manufacturer's recommendations, TO CONFIRM THE OPERATIONAL STATUS of the monitoring:		NA	
Provide QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.):		Thermocouple (temperature) calibrations	Accredited testing companies and labratories
[d] Provide the MONITORING FREQUENCY:		Daily during operation	Every five years
Provide the DATA COLLECTION PROCEDURES that will be used:		Electronic data collection	Source testing usting approved testing methods
Provide the DATA AVERAGING PERIOD for the purpose of determining whether an excursion or exceedance has occurred:		Daily (24 hour block) average	NA - Every five years

[a] Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

[b] Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

[c] The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

[d] Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

RATIONALE AND JUSTIFICATION

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide rationale and justification for the selection of EACH indicator and monitoring approach and EACH indicator range in order to meet the submittal requirements specified in 40 CFR §64.4.

6a) PSEU Designation:	6b) Regulated Air Pollutant:
Press Vents (PV), Fiber Dryer (D1) & Dryer Cyclone (C1)	HAPs/Methanol

7) **INDICATORS AND THE MONITORING APPROACH**: Provide the rationale and justification for the selection of the indicators and the monitoring approach used to measure the indicators. Also provide any data supporting the rationale and justification. Explain the reasons for any differences between the verification of operational status or the quality assurance and control practices proposed, and the manufacturer's recommendations. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

Bed temperatures will be used as an indicator and monitored/recorded on a daily basis. Source tests will also be used per the schedule and limits of the NSR And Title V permit conditions, 4.1.6 and 5.1.6 respectively.

8) **INDICATOR RANGES**: Provide the rationale and justification for the selection of the indicator ranges. The rationale and justification shall indicate how **EACH** indicator range was selected by either a COMPLIANCE OR PERFORMANCE TEST, a TEST PLAN AND SCHEDULE, or by ENGINEERING ASSESSMENTS. Depending on which method is being used for each indicator range, include the specific information required below for that specific indicator range. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

- COMPLIANCE OR PERFORMANCE TEST (Indicator ranges determined from control device operating parameter data obtained during a compliance or performance test conducted under regulatory specified conditions or under conditions representative of maximum potential emissions under anticipated operating conditions. Such data may be supplemented by engineering assessments and manufacturer's recommendations). The rationale and justification shall INCLUDE a summary of the compliance or performance test results that were used to determine the indicator range, and documentation indicating that no changes have taken place that could result in a significant change in the control system performance or the selected indicator ranges since the compliance or performance test was conducted.

- TEST PLAN AND SCHEDULE (Indicator ranges will be determined from a proposed implementation plan and schedule for installing, testing, and performing any other appropriate activities prior to use of the monitoring). The rationale and justification shall INCLUDE the proposed implementation plan and schedule that will provide for use of the monitoring as expeditiously as practicable after approval of this CAM plan, except that in no case shall the schedule for completing installation and beginning operation of the monitoring exceed 180 days after approval.

- ENGINEERING ASSESSMENTS (Indicator Ranges or the procedures for establishing indicator ranges are determined from engineering assessments and other data, such as manufacturers' design criteria and historical monitoring data, because factors specific to the type of monitoring, control device, or PSEU make compliance or performance testing unnecessary). The rationale and justification shall INCLUDE documentation demonstrating that compliance testing is not required to establish the indicator range.

RATIONALE AND JUSTIFICATION:

The selected indicator range is bed temperature moniotring and source test demonstration. When an excursion occurs, corrective action will be initiated beginning with an evaluation of the occurrence to determine the action required to correct the situation.

All excursions will be documented and reported. An indicator range of bed temperature montioring was selected because:

(1) Bed temperature - Most effiecnt indicator or destruction performance based on prior source test compliance demonstration
(2) Source testing - demonstrates emisison rates against prescribed limits of the NSR and Title V permits.

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Wed, Jun 26, 2024 at 11:48 AM
To: Randy Taylor <RTaylor@jeldwen.com>

Randy,

Thanks for sending the updated CAM Forms and the clarification about the Biofilter's control efficiency.

- The Fiber Dryer/Press Vents controlled by the Biofilter meet the CAM applicability criteria for Methanol:
    - §64.2(a)(1) - The Biofilter is subject to an emission limit for Methanol under the NSR permit.
    - §64.2(a)(2) - The emissions of Methanol from the Fiber Dryer and Press Vents are controlled by the Biofilter.
    - §64.2(a)(3) - Using the current permitted maximum production rate (179,683,869 sqft/yr -1/8") and the above inlet emission factor of 0.27 lbs/msqft-1/8", the pre-control device emissions from the Fiber Dryer/Press Vents would be 24.3 tpy, which is greater than the Title V major source threshold for an individual HAP (10 tpy).

  Please send the updated Attachment G: Air Pollution Control Device Form and the Attachment H: CAM Plan Form for the Biofilter, as soon as practicable.

- Given that the pre-control device Methanol emissions are close to the Title V major source threshold for aggregate HAPs (25 tpy) and that the emissions of several other HAPs are also controlled by the Biofilter, CAM may be applicable to the Biofilter for aggregate HAPs as well. Could you also calculate and send the Biofilter's inlet emissions for aggregate HAPs?

- Additionally, I noticed that the reported 2023 actual emissions of Dichloromethane (0.44 tpy) are greater than the facility-wide potential emissions that were sent in the updated calculations on February 2nd (0.08 tpy). In looking through the 2023 actual emissions report, I think that this may be because the actual Dichloromethane emission calculation from the wood-fired boiler was based on the results of the 2019 performance test which had reported that the results for dichloromethane were inaccurate. Could you please provide a more accurate calculation for the 2023 actual emissions of Dichloromethane?

Thanks,
- Sarah

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Fri, Jun 21, 2024 at 12:53 PM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Hi Sarah,

We appreciate you taking the time to discuss these in more detail. Following our discussions with you and the NSR permitting group we have provided responses to your questions below in red text.

Should you have any questions feel free to contact me or Eric, (I'll be out of town next week, 06/24-06/30)

- In the updated CAM Plan forms that you sent for the baghouses, it does not appear that the current CAM Plan requirements were included in the form. For instance, the only monitoring indicator included in the form is for visible emissions observations and some of the criteria for this indicator (such as the indicator range and monitoring frequency) do not match the current CAM Plan. Could you update these forms with the current CAM Plan?

  The CAM forms have been revised to include the current indicator ranges and requirement for each unit and are attached for your reference.

- In a previous email, I had mentioned that the Attachment G: Air Pollution Control Device Form for the Biofilter was not included in the renewal application and, unless I have overlooked it, it wasn't included in any of the subsequent documents that you have sent. Could you send me the control device form for the biofilter? Additionally, the CAM applicability determination for the biofilter needs to be updated as the facility is no longer subject to 40 C.F.R. Part 63 Subpart DDDD, and the CAM exemption of §64.2(b)(1)(i) no longer applies.

  Following our discussion last week, we have reviewed the methanol inlet emission factors on the biofilter and have determined the pre-control emissions would likely trigger CAM applicability. Based on the prior source testing events (2014 – 2018) methanol inlet emissions have ranged from 0.15 – 0.27 lb/Mft2 - 1/8" basis and average 0.27 b/Mft2 - 1/8" basis when factoring a 2X standard deviation (see table below). When applying this emission factor to the proposed production this would correlate to approximately 25.47 TPY of inlet (pre-control) methanol emissions and 0.96 TPY to atmosphere. Additionally, the biofilter is demonstrating a 96% destruction efficiency based on the current emissions factors.

  Pending WVDEP's CAM determination the associated CAM form (Attachment H) will be provided with the suggested indicators being biofilter bed temperature monitoring and source testing demonstration.

Biofilter (BF-E18) Estimated Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MSF-1/8")		Biofilter Emissions	
	Outlet (Emissions Factor)	Inlet (Emissions Factor)	Maximum Estimated Biofilter Inlet Emissions tons/yr	Maximum Estimated Biofilter Outlet Emissions tons/yr
Methanol	0.01018	0.27	25.47	0.96
Proposed Production	188,668			
		Destruction Efficiency		96%

- In the updated PTE calculations for the biofilter, there are still several inconsistencies between the reported potential emissions and the emission limits permitted under Condition 5.1.6. of the operating permit. Specifically, the reported potential emissions of Acetaldehyde, Formaldehyde, Methanol, Phenol, Propionaldehyde, and aggregate HAPs are greater than the permitted limits. It appears that this is because the emissions factors of the individual HAPs were recalculated. These changes cannot be incorporated into the Title V operating permit unless a revision application is submitted for the facility's NSR permit and Title V permit. Do you plan to revise these limits?

  Following additional discussions with WVDEP we will be submitting a NSR Class II Administrative Update to include the additional capacity and updated biofilter emission factors. The application will be submitted to WVDEP by July 31, 2024.

- In the PTE calculations for the biofilter, a footnote states that the biofilter manufacturer provided the control efficiencies for VOCs, Methanol, and Formaldehyde. Could you please provide documentation of the manufacturer's guarantee for the control efficiencies?

  Based on the current permit structure placing limits on the outlet with compliance

demonstration by performance testing, control efficiencies no longer need to be a primary reference.

The best footnote to reference would be the EF source test reference in footnote (3). Currently none of the calculations are associated to the manufacturer's control efficiency claim but do use the demonstrated source test EFs as referenced. The footnotes have been restructured which includes the removal of footnote #2 to better follow the permit structure and identify specific emissions factors. These will be reflected in the forms when updating the application for the NSR Class II Administrative Update.

Thank you,

Randy Taylor, ASP | EHS Manager

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Tuesday, June 4, 2024 8:02 AM
To: Randy Taylor <RTaylor@jeldwen.com>
Subject: Re: Fw: Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy,
[Quoted text hidden]

Att Hs for BH1a-c and BH2-4 (Revised 2024-06).pdf
585K

ATTACHMENT H: COMPLIANCE ASSURANCE MONITORING PLAN FORMS

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

For definitions and information about the CAM rule, please refer to 40 CFR Part 64. Additional information (including guidance documents) may also be found at http://www.epa.gov/ttn/emc/cam.html

CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to **EACH** regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet **all** of the following criteria (*If No, then the remainder of this form need not be completed*): ☒ YES ☐ NO

a. The PSEU is located at a major source that is required to obtain a Title V permit;

b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is NOT exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
- Stratospheric Ozone Protection Requirements.
- Acid Rain Program Requirements.
- Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
- An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).

c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;

d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND

e. The PSEU is NOT an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

☒ RENEWAL APPLICATION. **ALL** PSEUs for which a CAM plan has NOT yet been approved need to be addressed in this CAM plan submittal.

☐ INITIAL APPLICATION (submitted after 4/20/98). **ONLY** large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.

☐ SIGNIFICANT MODIFICATION TO LARGE PSEUs. **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, Only address the appropriate monitoring requirements affected by the significant modification.

3) [a] BACKGROUND DATA AND INFORMATION					
Complete the following table for **all** PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU In order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.					
PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	[b] EMISSION LIMITATION or STANDARD	[c] MONITORING REQUIREMENT
D1, C1, C8, PV, C7	Material Transfer	PM/PM10	BH1a	45 CSR § 7-3.1	Monitor daily pressure drop across the baghouse; quarterly baghouse inspections; and weekly visible emissions.
D1, C1, C8, PV, C7	Material Transfer	PM/PM10	BH1b	45 CSR § 7-3.1	Monitor daily pressure drop across the baghouse; quarterly baghouse inspections; and weekly visible emissions.)
D1, C1, C8, PV, C7	Material Transfer	PM/PM10	BH1c	45 CSR § 7-3.1	Monitor daily pressure drop across the baghouse; quarterly baghouse inspections; and weekly visible emissions.)
EXAMPLE Boiler No. 1	Wood-Fired Boiler	PM	Multiclone	45CSR§2-4.1.c.; 9.0 lb/hr	Monitor pressure drop across multiclone: Weekly inspection of multiclone

[a] If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

[b] Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

[c] Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

CAM MONITORING APPROACH CRITERIA

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for EACH indicator selected for EACH PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. if more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.

4a) PSEU Designation: D1, C1, C8, PV, C7	**4b) Pollutant:** PM/PM10	**4c) [a] Indicator No. 1:** Periodic Baghouse Pressure Drop Observations and Inspections	**4d) [a] Indicator No. 2:** Periodic montioring of visible emissions
5a) GENERAL CRITERIA Describe the MONITORING APPROACH used to measure the indicators:		Visual pressure drop readings / Visual inspections of baghouse	Method 22 visible emissions survey.
[b] Establish the appropriate INDICATOR RANGE or the procedures for establishing the indicator range which provides a reasonable assurance of compliance:		Pressure drop range of 0.2 inches of water to 4.0 inches of water	No visible emissions > 20% opacity.
5b) PERFORMANCE CRITERIA Provide the SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA, such as detector location, installation specifications, and minimum acceptable accuracy:		Pressure drop observations are performed during baghouse operation and recorded daily	Measurements are being made at the emission point (baghouse exhaust).
[c] For new or modified monitoring equipment, provide VERIFICATION PROCEDURES, including manufacturer's recommendations, TO CONFIRM THE OPERATIONAL STATUS of the monitoring:		NA	NA
Provide QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.):		The observer will be familiar with the pressure drop operating range and with the operation of the baghouse.	The observer will be famliar with EPA Method 22 and follow Method 22-like procedures
[d] Provide the MONITORING FREQUENCY:		Daily (readings) / Quarterly (inspections)	Weekly
Provide the DATA COLLECTION PROCEDURES that will be used:		Manual log entries	Manual log entries
Provide the DATA AVERAGING PERIOD for the purpose of determining whether an excursion or exceedance has occurred:		NA	NA

[a] Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

[b] Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

[c] The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

[d] Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

RATIONALE AND JUSTIFICATION

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide rationale and justification for the selection of EACH indicator and monitoring approach and EACH indicator range in order to meet the submittal requirements specified in 40 CFR §64.4.

6a) PSEU Designation:	6b) Regulated Air Pollutant:
D1, C1, C8, PV, C7	PM/PM10

7) **INDICATORS AND THE MONITORING APPROACH**: Provide the rationale and justification for the selection of the indicators and the monitoring approach used to measure the indicators. Also provide any data supporting the rationale and justification. Explain the reasons for any differences between the verification of operational status or the quality assurance and control practices proposed, and the manufacturer's recommendations. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

Visible emissions will be used as an indicator. Normal process operation will not produce conditions that adversely affect the baghouse, so no process operation parameters will be monitored.

Visible emissions from the baghouse exhaust (BF) will be monitored monthly using EPA Reference Method 22-like procedures. The observation will be performed for a sufficient time interval, but not less than one minute and will be recorded on a log by the observer.

Differential pressure will also serve as indicator and will be monitored and recorded during baghouse operation daily

8) **INDICATOR RANGES**: Provide the rationale and justification for the selection of the indicator ranges. The rationale and justification shall indicate how **EACH** indicator range was selected by either a COMPLIANCE OR PERFORMANCE TEST, a TEST PLAN AND SCHEDULE, or by ENGINEERING ASSESSMENTS. Depending on which method is being used for each indicator range, include the specific information required below for that specific indicator range. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

- COMPLIANCE OR PERFORMANCE TEST (Indicator ranges determined from control device operating parameter data obtained during a compliance or performance test conducted under regulatory specified conditions or under conditions representative of maximum potential emissions under anticipated operating conditions. Such data may be supplemented by engineering assessments and manufacturer's recommendations). The rationale and justification shall INCLUDE a summary of the compliance or performance test results that were used to determine the indicator range, and documentation indicating that no changes have taken place that could result in a significant change in the control system performance or the selected indicator ranges since the compliance or performance test was conducted.

- TEST PLAN AND SCHEDULE (Indicator ranges will be determined from a proposed implementation plan and schedule for installing, testing, and performing any other appropriate activities prior to use of the monitoring). The rationale and justification shall INCLUDE the proposed implementation plan and schedule that will provide for use of the monitoring as expeditiously as practicable after approval of this CAM plan, except that in no case shall the schedule for completing installation and beginning operation of the monitoring exceed 180 days after approval.

- ENGINEERING ASSESSMENTS (Indicator Ranges or the procedures for establishing indicator ranges are determined from engineering assessments and other data, such as manufacturers' design criteria and historical monitoring data, because factors specific to the type of monitoring, control device, or PSEU make compliance or performance testing unnecessary). The rationale and justification shall INCLUDE documentation demonstrating that compliance testing is not required to establish the indicator range.

RATIONALE AND JUSTIFICATION:

The selected indicator range is no visible emissions. When an excursion occurs, corrective action will be initiated beginning with an evaluation of the occurrence to determine the action required to correct the situation.

All excursions will be documented and reported. An indicator range of no differential pressure and no visible emissions was selected because:

(1) an increase in the visible emissions is indicative of an incease in particulate emissions;
and
(2) a monitoring technique which does not require a Method 9 observer is desired.
(3) Increased differential pressure can indicate impacted baghouse operational performance.

Although Method 22 applies to fugitive sources, the visible/no visible emissions observation technique of Method 22 can be applied to ducted emissions; i.e., Method 22-like observations.

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

For definitions and information about the CAM rule, please refer to 40 CFR Part 64. Additional information (including guidance documents) may also be found at http://www.epa.gov/ttn/emc/cam.html

CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to **EACH** regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet **all** of the following criteria (*If No, then the remainder of this form need not be completed*): ☒ YES ☐ NO

a. The PSEU is located at a major source that is required to obtain a Title V permit;

b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is NOT exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
- Stratospheric Ozone Protection Requirements.
- Acid Rain Program Requirements.
- Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
- An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).

c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;

d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND

e. The PSEU is NOT an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

☒ RENEWAL APPLICATION. **ALL** PSEUs for which a CAM plan has NOT yet been approved need to be addressed in this CAM plan submittal.

☐ INITIAL APPLICATION (submitted after 4/20/98). **ONLY** large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.

☐ SIGNIFICANT MODIFICATION TO LARGE PSEUs. **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, Only address the appropriate monitoring requirements affected by the significant modification.

3) [a] BACKGROUND DATA AND INFORMATION					
Complete the following table for **all** PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU In order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.					
PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	[b] EMISSION LIMITATION or STANDARD	[c] MONITORING REQUIREMENT
Fiber Prior to the Press (FLa)	Material Transfer	PM/PM10	BH2	45 CSR § 7-3.1	Monitor daily pressure drop across the baghouse; quarterly baghouse inspections; and weekly visible emissions
EXAMPLE Boiler No. 1	Wood-Fired Boiler	PM	Multiclone	45CSR§2-4.1.c.; 9.0 lb/hr	Monitor pressure drop across multiclone: Weekly inspection of multiclone

[a] If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

[b] Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

[c] Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

CAM MONITORING APPROACH CRITERIA

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for EACH indicator selected for EACH PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. if more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.

4a) PSEU Designation: Fiber Prior to the Press (FLa)	**4b) Pollutant:** PM/PM10	**4c) [a] Indicator No. 1:** Periodic Baghouse Pressure Drop Observations and Inspections	**4d) [a] Indicator No. 2:** Periodic monitoring of visible emissions
5a) GENERAL CRITERIA Describe the MONITORING APPROACH used to measure the indicators:		Visual pressure drop readings / Visual inspections of baghouse.	Method 22 visible emissions survey
[b] Establish the appropriate INDICATOR RANGE or the procedures for establishing the indicator range which provides a reasonable assurance of compliance:		Pressure drop range of 0.2 inches of water to 4.0 inches of water.	No visible emissions >20% opacity
5b) PERFORMANCE CRITERIA Provide the SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA, such as detector location, installation specifications, and minimum acceptable accuracy:		Pressure drop observations are performed during baghouse operation and recorded daily	Measurements are being made at the emission point (baghouse exhaust)
[c] For new or modified monitoring equipment, provide VERIFICATION PROCEDURES, including manufacturer's recommendations, TO CONFIRM THE OPERATIONAL STATUS of the monitoring:		NA	NA
Provide QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.):		The observer will be famliar with the pressure drop operating range and with the operation of the baghouse.	The observer will be famliar with EPA Method 22 and follow Method 22-like procedures
[d] Provide the MONITORING FREQUENCY:		Daily (readings) / Quarterly (inspections)	Weekly
Provide the DATA COLLECTION PROCEDURES that will be used:		Manual log entries	Manual log entries
Provide the DATA AVERAGING PERIOD for the purpose of determining whether an excursion or exceedance has occurred:		NA	NA

[a] Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

[b] Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

[c] The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

[d] Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

RATIONALE AND JUSTIFICATION

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide rationale and justification for the selection of EACH indicator and monitoring approach and EACH indicator range in order to meet the submittal requirements specified in 40 CFR §64.4.

6a) PSEU Designation:	6b) Regulated Air Pollutant:
Fiber Prior to the Press (FLa)	PM/PM10

7) **INDICATORS AND THE MONITORING APPROACH**: Provide the rationale and justification for the selection of the indicators and the monitoring approach used to measure the indicators. Also provide any data supporting the rationale and justification. Explain the reasons for any differences between the verification of operational status or the quality assurance and control practices proposed, and the manufacturer's recommendations. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

Visible emissions will be used as an indicator. Normal process operation will not produce conditions that adversely affect the baghouse, so no process operation parameters will be monitored.

Visible emissions from the baghouse exhaust will be monitored monthly using EPA Reference Method 22-like procedures. The observation will be performed for a sufficient time interval, but not less than one minute and will be recorded on a log by the observer.

Differential pressure will also serve as an indicator and will be monitored and recorded during baghouse operation daily

8) **INDICATOR RANGES**: Provide the rationale and justification for the selection of the indicator ranges. The rationale and justification shall indicate how **EACH** indicator range was selected by either a COMPLIANCE OR PERFORMANCE TEST, a TEST PLAN AND SCHEDULE, or by ENGINEERING ASSESSMENTS. Depending on which method is being used for each indicator range, include the specific information required below for that specific indicator range. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

- COMPLIANCE OR PERFORMANCE TEST (Indicator ranges determined from control device operating parameter data obtained during a compliance or performance test conducted under regulatory specified conditions or under conditions representative of maximum potential emissions under anticipated operating conditions. Such data may be supplemented by engineering assessments and manufacturer's recommendations). The rationale and justification shall INCLUDE a summary of the compliance or performance test results that were used to determine the indicator range, and documentation indicating that no changes have taken place that could result in a significant change in the control system performance or the selected indicator ranges since the compliance or performance test was conducted.

- TEST PLAN AND SCHEDULE (Indicator ranges will be determined from a proposed implementation plan and schedule for installing, testing, and performing any other appropriate activities prior to use of the monitoring). The rationale and justification shall INCLUDE the proposed implementation plan and schedule that will provide for use of the monitoring as expeditiously as practicable after approval of this CAM plan, except that in no case shall the schedule for completing installation and beginning operation of the monitoring exceed 180 days after approval.

- ENGINEERING ASSESSMENTS (Indicator Ranges or the procedures for establishing indicator ranges are determined from engineering assessments and other data, such as manufacturers' design criteria and historical monitoring data, because factors specific to the type of monitoring, control device, or PSEU make compliance or performance testing unnecessary). The rationale and justification shall INCLUDE documentation demonstrating that compliance testing is not required to establish the indicator range.

RATIONALE AND JUSTIFICATION:

The selected indicator range is no visible emissions. When an excursion occurs, corrective action will be initiated beginning with an evaluation of the occurrence to determine the action required to correct the situation.

All excursions will be documented and reported. An indicator range of no differential pressure and no visible emissions was selected because:

(1) an increase in the visible emissions is indicative of an incease in particulate emissions;
and
(2) a monitoring technique which does not require a Method 9 observer is desired.
(3) Increased differential pressure can indicate impacted baghouse operational performance

Although Method 22 applies to fugitive sources, the visible/no visible emissions observation technique of Method 22 can be applied to ducted emissions; i.e., Method 22-like observations.

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

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CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to **EACH** regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet **all** of the following criteria (*If No, then the remainder of this form need not be completed*): ☒ YES ☐ NO

a. The PSEU is located at a major source that is required to obtain a Title V permit;

b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is NOT exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
- Stratospheric Ozone Protection Requirements.
- Acid Rain Program Requirements.
- Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
- An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).

c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;

d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND

e. The PSEU is NOT an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

☒ RENEWAL APPLICATION. **ALL** PSEUs for which a CAM plan has NOT yet been approved need to be addressed in this CAM plan submittal.

☐ INITIAL APPLICATION (submitted after 4/20/98). **ONLY** large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.

☐ SIGNIFICANT MODIFICATION TO LARGE PSEUs. **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, Only address the appropriate monitoring requirements affected by the significant modification.

3) [a] BACKGROUND DATA AND INFORMATION					
Complete the following table for **all** PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU In order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.					
PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	[b] EMISSION LIMITATION or STANDARD	[c] MONITORING REQUIREMENT
FLa, FLSN, FLSS, C2, C3, C4, C6	Material Transfer	PM/PM10	BH3	45 CSR § 7-3.1	Monitor daily pressure drop across the baghouse; quarterly baghouse inspections; and weekly visible emissions.
EXAMPLE Boiler No. 1	Wood-Fired Boiler	PM	Multiclone	45CSR§2-4.1.c.; 9.0 lb/hr	Monitor pressure drop across multiclone: Weekly inspection of multiclone

[a] If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

[b] Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

[c] Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

CAM MONITORING APPROACH CRITERIA			
Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for EACH indicator selected for EACH PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. if more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.			
4a) PSEU Designation: FLa, FLSN, FLSS, C2, C3, C4, C6	**4b) Pollutant:** PM/PM10	**4c) [a] Indicator No. 1:** PeriodicBaghouse Pressure Drop Observations and Inspections	**4d) a Indicator No. 2:**Periodic monitoring of visible emissions
5a) GENERAL CRITERIA Describe the MONITORING APPROACH used to measure the indicators:		Visual pressure drop readings / Visual inspections of baghouse	Method 22 visible emissions survey.
[b] Establish the appropriate INDICATOR RANGE or the procedures for establishing the indicator range which provides a reasonable assurance of compliance:		Pressure drop range of 0.2 inches of water to 4.0 inches of water.	No visible emissions > 20% opacity.
5b) PERFORMANCE CRITERIA Provide the SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA, such as detector location, installation specifications, and minimum acceptable accuracy:		Pressure drop observations are performed during baghouse operation and recorded daily	Measurements are being made at the emission point (baghouse exhaust).
[c] For new or modified monitoring equipment, provide VERIFICATION PROCEDURES, including manufacturer's recommendations, TO CONFIRM THE OPERATIONAL STATUS of the monitoring:		NA	NA
Provide QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.):		The observer will be famliar with the pressure drop operating range and with the operation of the baghouse.	The observer will be familiar with EPA Method 22 and follow Method 22-like procedures
[d] Provide the MONITORING FREQUENCY:		Daily (readings) / Quarterly (inspections)	Weekly
Provide the DATA COLLECTION PROCEDURES that will be used:		Manual log entries	Manual log entries
Provide the DATA AVERAGING PERIOD for the purpose of determining whether an excursion or exceedance has occurred:		NA	NA

[a] Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

[b] Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

[c] The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

[d] Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

RATIONALE AND JUSTIFICATION

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6a) PSEU Designation:	6b) Regulated Air Pollutant:
FLa, FLSN, FLSS, C2, C3, C4, C6	PM/PM10/

7) **INDICATORS AND THE MONITORING APPROACH**: Provide the rationale and justification for the selection of the indicators and the monitoring approach used to measure the indicators. Also provide any data supporting the rationale and justification. Explain the reasons for any differences between the verification of operational status or the quality assurance and control practices proposed, and the manufacturer's recommendations. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

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RATIONALE AND JUSTIFICATION:

The selected indicator range is no visible emissions. When an excursion occurs, corrective action will be initiated beginning with an evaluation of the occurrence to determine the action required to correct the situation.

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(1) an increase in the visible emissions is indicative of an incease in particulate emissions;
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a. The PSEU is located at a major source that is required to obtain a Title V permit;

b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is NOT exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
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- Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
- An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).

c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;

d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND

e. The PSEU is NOT an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

☒ RENEWAL APPLICATION. **ALL** PSEUs for which a CAM plan has NOT yet been approved need to be addressed in this CAM plan submittal.

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☐ SIGNIFICANT MODIFICATION TO LARGE PSEUs. **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, Only address the appropriate monitoring requirements affected by the significant modification.

3) [a] BACKGROUND DATA AND INFORMATION					
Complete the following table for **all** PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU In order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.					
PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	[b] EMISSION LIMITATION or STANDARD	[c] MONITORING REQUIREMENT
FLa, C5	Material Transfer	PM/PM10	BH4	45 CSR § 7-3.1	Monitor daily pressure drop across the baghouse; quarterly baghouse inspections; and weekly visible emissions
EXAMPLE Boiler No. 1	Wood-Fired Boiler	PM	Multiclone	45CSR§2-4.1.c.; 9.0 lb/hr	Monitor pressure drop across multiclone: Weekly inspection of multiclone

[a] If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

[b] Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

[c] Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

CAM MONITORING APPROACH CRITERIA

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for EACH indicator selected for EACH PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. if more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.

4a) PSEU Designation: FLa, C5	**4b) Pollutant:** PM/PM10	**4c) [a] Indicator No. 1:** Periodic Baghouse Pressure Drop observations and Inspections	**4d) a Indicator No. 2:**Periodic monitoring of visible emissions
5a) GENERAL CRITERIA Describe the MONITORING APPROACH used to measure the indicators:		Visual pressure drop readings / Visual inspections of baghouse	Method 22 visible emissions survey.
[b] Establish the appropriate INDICATOR RANGE or the procedures for establishing the indicator range which provides a reasonable assurance of compliance:		Pressure drop range of 0.2 inches of water to 4.0 inches of water	No visible emissions > 20% opacity.
5b) PERFORMANCE CRITERIA Provide the SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA, such as detector location, installation specifications, and minimum acceptable accuracy:		Pressure drop observations are performed during baghouse operation and recorded daily	Measurements are being made at the emission point (baghouse exhaust).
[c] For new or modified monitoring equipment, provide VERIFICATION PROCEDURES, including manufacturer's recommendations, TO CONFIRM THE OPERATIONAL STATUS of the monitoring:		NA	NA
Provide QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.):		The observer will be famliar with the pressure drop operating range and with the operation of the baghouse.	The observer will be famliar with EPA Method 22 and follow Method 22-like procedures
[d] Provide the MONITORING FREQUENCY:		Daily (readings) / Quarterly (inspections)	Weekly
Provide the DATA COLLECTION PROCEDURES that will be used:		Manual log entries	Manual log entries
Provide the DATA AVERAGING PERIOD for the purpose of determining whether an excursion or exceedance has occurred:		NA	NA

[a] Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

[b] Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

[c] The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

[d] Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

RATIONALE AND JUSTIFICATION

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide rationale and justification for the selection of EACH indicator and monitoring approach and EACH indicator range in order to meet the submittal requirements specified in 40 CFR §64.4.

6a) PSEU Designation:	6b) Regulated Air Pollutant:
FLa, C5	PM/PM10

7) **INDICATORS AND THE MONITORING APPROACH**: Provide the rationale and justification for the selection of the indicators and the monitoring approach used to measure the indicators. Also provide any data supporting the rationale and justification. Explain the reasons for any differences between the verification of operational status or the quality assurance and control practices proposed, and the manufacturer's recommendations. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

Visible emissions will be used as an indicator. Normal process operation will not produce conditions that adversely affect the baghouse, so no process operation parameters will be monitored.

Visible emissions from the baghouse exhaust will be monitored monthly using EPA Reference Method 22-like procedures. The observation will be performed for a sufficient time interval, but not less than one minute and will be recorded on a log by the observer.

Differential pressure will also serve as an indicator and will be monitored and recorded during baghouse operation daily

8) **INDICATOR RANGES**: Provide the rationale and justification for the selection of the indicator ranges. The rationale and justification shall indicate how **EACH** indicator range was selected by either a COMPLIANCE OR PERFORMANCE TEST, a TEST PLAN AND SCHEDULE, or by ENGINEERING ASSESSMENTS. Depending on which method is being used for each indicator range, include the specific information required below for that specific indicator range. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

- COMPLIANCE OR PERFORMANCE TEST (Indicator ranges determined from control device operating parameter data obtained during a compliance or performance test conducted under regulatory specified conditions or under conditions representative of maximum potential emissions under anticipated operating conditions. Such data may be supplemented by engineering assessments and manufacturer's recommendations). The rationale and justification shall INCLUDE a summary of the compliance or performance test results that were used to determine the indicator range, and documentation indicating that no changes have taken place that could result in a significant change in the control system performance or the selected indicator ranges since the compliance or performance test was conducted.

- TEST PLAN AND SCHEDULE (Indicator ranges will be determined from a proposed implementation plan and schedule for installing, testing, and performing any other appropriate activities prior to use of the monitoring). The rationale and justification shall INCLUDE the proposed implementation plan and schedule that will provide for use of the monitoring as expeditiously as practicable after approval of this CAM plan, except that in no case shall the schedule for completing installation and beginning operation of the monitoring exceed 180 days after approval.

- ENGINEERING ASSESSMENTS (Indicator Ranges or the procedures for establishing indicator ranges are determined from engineering assessments and other data, such as manufacturers' design criteria and historical monitoring data, because factors specific to the type of monitoring, control device, or PSEU make compliance or performance testing unnecessary). The rationale and justification shall INCLUDE documentation demonstrating that compliance testing is not required to establish the indicator range.

RATIONALE AND JUSTIFICATION:

The selected indicator range is no visible emissions. When an excursion occurs, corrective action will be initiated beginning with an evaluation of the occurrence to determine the action required to correct the situation.

All excursions will be documented and reported. An indicator range of no differential pressure and no visible emissions was selected because:

(1) an increase in the visible emissions is indicative of an incease in particulate emissions;
and
(2) a monitoring technique which does not require a Method 9 observer is desired.
(3) Increased differential pressure can indicate impacted baghouse operational performance

Although Method 22 applies to fugitive sources, the visible/no visible emissions observation technique of Method 22 can be applied to ducted emissions; i.e., Method 22-like observations.

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Tue, Jun 11, 2024 at 10:11 AM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Ok, great. Thanks!

Randy Taylor, ASP | EHS Manager

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Tuesday, June 11, 2024 9:18 AM
To: Randy Taylor <RTaylor@jeldwen.com>
Subject: Re: Fw: Title V Permit - Request for Information - Application No. R30-06700095-2024

That should be fine for me.

- Sarah

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Tue, Jun 11, 2024 at 9:18 AM
To: Randy Taylor <RTaylor@jeldwen.com>

That should be fine for me.

- Sarah

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Tue, Jun 11, 2024 at 9:15 AM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Thank you, will 10 am work for you?

Randy Taylor, ASP | EHS Manager

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Monday, June 10, 2024 4:47 PM
To: Randy Taylor <RTaylor@jeldwen.com>
Subject: Re: Fw: Title V Permit - Request for Information - Application No. R30-06700095-2024

I'll be available to speak anytime on Thursday. Please let me know what time works best for you.

- Sarah

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Mon, Jun 10, 2024 at 4:47 PM
To: Randy Taylor <RTaylor@jeldwen.com>

I'll be available to speak anytime on Thursday. Please let me know what time works best for you.

- Sarah

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Mon, Jun 10, 2024 at 4:40 PM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Good afternoon Sarah,

Would you have time on Thursday to discuss these things with Eric and me? We just need some clarification on a few things.
Thank you,

Randy Taylor, ASP | EHS Manager

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Tuesday, June 4, 2024 8:02 AM
To: Randy Taylor <RTaylor@jeldwen.com>
Subject: Re: Fw: Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy,
[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Tue, Jun 4, 2024 at 8:02 AM
To: Randy Taylor <RTaylor@jeldwen.com>

Randy,

I've actually been going back through this renewal recently, and there are several things that need to be addressed.

When we previously spoke, you had asked about revising the CAM Plan for the baghouses by changing the frequency of the required differential pressure readings from daily readings (as required in Condition 5.2.4.) to weekly readings. After going back through the rule for CAM, I found that §64.3(b)(4)(iii) requires that the monitoring of "other" PSEUs, such as these baghouses, must include some data collection conducted at least once per 24-hour period. Therefore, the frequency of the readings cannot be changed to weekly.

Additionally, please send me the following forms/information:

- In the updated CAM Plan forms that you sent for the baghouses, it does not appear that the current CAM Plan requirements were included in the form. For instance, the only monitoring indicator included in the form is for visible emissions observations and some of the criteria for this indicator (such as the indicator range and monitoring frequency) do not match the current CAM Plan. Could you update these forms with the current CAM Plan?

- In a previous email, I had mentioned that the Attachment G: Air Pollution Control Device Form for the Biofilter was not included in the renewal application and, unless I have overlooked it, it wasn't included in any of the subsequent documents that you have sent. Could you send me the control device form for the biofilter? Additionally, the CAM applicability determination for the biofilter needs to be updated as the facility is no longer subject to 40 C.F.R. Part 63 Subpart DDDD, and the CAM exemption of §64.2(b)(1)(i) no longer applies.

- In the updated PTE calculations for the biofilter, there are still several inconsistencies between the reported potential emissions and the emission limits permitted under Condition 5.1.6. of the operating permit. Specifically, the reported potential emissions of Acetaldehyde, Formaldehyde, Methanol, Phenol, Propionaldehyde, and aggregate HAPs are greater than the permitted limits. It appears that this is because the emissions factors of the individual HAPs were recalculated. These changes cannot be incorporated into the Title V operating permit unless a revision application is submitted for the facility's NSR permit and Title V permit. Do you plan to revise these limits?

- In the PTE calculations for the biofilter, a footnote states that the biofilter manufacturer provided the control efficiencies for VOCs, Methanol, and Formaldehyde. Could you please provide documentation of the manufacturer's guarantee for the control efficiencies?

Please let me know if you have any questions or would like to discuss any of these topics further.

Thanks,
- Sarah

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Fri, May 31, 2024 at 9:41 AM
To: Sarah K Barron <sarah.k.barron@wv.gov>

Good morning Sarah,

Just wanted to touch base with you on our air permit submittal. Do you need anything else at this time?

Thank you,

Randy Taylor, ASP | EHS Manager

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Randy Taylor <RTaylor@jeldwen.com>
Sent: Tuesday, April 16, 2024 3:53 PM
To: Barron, Sarah K <sarah.k.barron@wv.gov>
Cc: Eric Rapp <ERapp@jeldwen.com>
[Quoted text hidden]

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Tue, Apr 16, 2024 at 3:53 PM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>
Cc: Eric Rapp <ERapp@jeldwen.com>

Hi Sarah,

The CAM applicability has been revised on the Attachment G forms for the following control devices (BH1a-c, BH2, BH3, BH4, as discussed in our last meeting. The CAM plan forms (Attachment H) for each respective control device have also been revised and are attached in a combined pdf.

Should you have any questions let us know.

Thanks,

Randy Taylor, ASP | EHS Manager

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Monday, April 1, 2024 4:30 PM
To: Randy Taylor <rtaylor@jeldwen.com>; Eric Rapp <erapp@jeldwen.com>
[Quoted text hidden]

[Quoted text hidden]

Att G & Hs for BH1a-c and BH2-4 (Revised 2024-04).pdf
445K

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH1a	**List all emission units associated with this control device.** Press Vents (PV), Fiber Dryer (D1), Dryer Cyclone (C1)	
Manufacturer: Clarkes' Sheet Metal	**Model number:** 1-100-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.95%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 6,451 SF total cloth area
- 6.97:1 ft/min operating air to cloth ratio
- Average ACFM:34,000 @ 160ºF,
- Continuous operation

Is this device subject to the CAM requirements of 40 C.F.R. 64? _X_ Yes ___ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform month visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH1b	**List all emission units associated with this control device.** Press Vents (PV), Fiber Dryer (D1), Dryer Cyclone (C1)	
Manufacturer: Clarkes' Sheet Metal	**Model number:** 1-100-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.95%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 6,451 SF total cloth area
- 6.97:1 ft/min operating air to cloth ratio
- Average ACFM: 34,000 @ 160ºF
- Continuous operation

Is this device subject to the CAM requirements of 40 C.F.R. 64? _X_ Yes ___ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform month visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH1c	**List all emission units associated with this control device.** Press Vents (PV), Fiber Dryer (D1), Dryer Cyclone (C1)	
Manufacturer: Clarkes' Sheet Metal	**Model number:** 1-100-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.95%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 6,451 SF total cloth area
- 6.97:1 ft/min operating air to cloth ratio
- Average ACFM: 34,000 @ 160^{o}F
- Continuous operation

Is this device subject to the CAM requirements of 40 C.F.R. 64? _X_ Yes ___ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform month visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH2 (Former Baghouse)	**List all emission units associated with this control device.** Fiber line prior to the press (FLa)	
Manufacturer: Clarkes' Sheet Metal	**Model number:** P38-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.90%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 2,527 SF total cloth area
- 9.14:1 ft/min operating air to cloth ratio
- Average ACFM: 23,100 @ 160ºF
- Continuous operation,

Is this device subject to the CAM requirements of 40 C.F.R. 64? _X_ Yes ___ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform month visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH3	**List all emission units associated with this control device.** Fiber line prior to the press (FLa), North Fuel Storage Silo (FLSN), South Fuel Storage Silo (FLSS), C2, C3, C4, C6	
Manufacturer: Clarkes' Sheet Metal	**Model number:** 1-100-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.90%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 6,451 SF total cloth area
- 6.97:1 ft/min operating air to cloth ratio
- Average ACFM: 34,000 @ 160^{o}F
- Continuous operation,

Is this device subject to the CAM requirements of 40 C.F.R. 64? _X_ Yes ___ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform month visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH4 (Sizer Baghouse)	**List all emission units associated with this control device.** Fiber line after the press (FLb), Chip Cleaning Cyclone (C5)	
Manufacturer: Clarkes' Sheet Metal	**Model number:** P57-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.95%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 4,548 SF total cloth area
- 7.03:1 ft/min operating air to cloth ratio
- Average ACFM: 32,000 @ 160^{o}F
- Continuous operation,

Is this device subject to the CAM requirements of 40 C.F.R. 64? _X_ Yes ___ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform month visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

ATTACHMENT H: COMPLIANCE ASSURANCE MONITORING PLAN FORMS

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

For definitions and information about the CAM rule, please refer to 40 CFR Part 64. Additional information (including guidance documents) may also be found at http://www.epa.gov/ttn/emc/cam.html

CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to **EACH** regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet **all** of the following criteria (*If No, then the remainder of this form need not be completed*): ☒ YES ☐ NO

a. The PSEU is located at a major source that is required to obtain a Title V permit;

b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is NOT exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
- Stratospheric Ozone Protection Requirements.
- Acid Rain Program Requirements.
- Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
- An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).

c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;

d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND

e. The PSEU is NOT an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

☒ RENEWAL APPLICATION. **ALL** PSEUs for which a CAM plan has NOT yet been approved need to be addressed in this CAM plan submittal.

☐ INITIAL APPLICATION (submitted after 4/20/98). **ONLY** large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.

☐ SIGNIFICANT MODIFICATION TO LARGE PSEUs. **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, Only address the appropriate monitoring requirements affected by the significant modification.

3) [a] BACKGROUND DATA AND INFORMATION					
Complete the following table for **all** PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU In order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.					
PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	[b] EMISSION LIMITATION or STANDARD	[c] MONITORING REQUIREMENT
D1, C1, C8, PV, C7	Material Transfer	PM/PM10/ PM 2.5	BH1a	45 CSR § 7-3.1	Periodic monitoring of visible emissions (EPA Method 22) at the emission point (BF)
D1, C1, C8, PV, C7	Material Transfer	PM/PM10/ PM 2.5	BH1b	45 CSR § 7-3.1	Periodic monitoring of visible emissions (EPA Method 22) at the emission point (BF)
D1, C1, C8, PV, C7	Material Transfer	PM/PM10/ PM 2.5	BH1c	45 CSR § 7-3.1	Periodic monitoring of visible emissions (EPA Method 22) at the emission point (BF)
EXAMPLE Boiler No. 1	Wood-Fired Boiler	PM	Multiclone	45CSR§2-4.1.c.; 9.0 lb/hr	Monitor pressure drop across multiclone: Weekly inspection of multiclone

[a] If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

[b] Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

[c] Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

CAM MONITORING APPROACH CRITERIA

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for EACH indicator selected for EACH PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. if more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.

4a) PSEU Designation: D1, C1, C8, PV, C7	**4b) Pollutant:** PM/PM10/ PM 2.5	**4c) [a] Indicator No. 1:** Periodic monitoring of visible emissions	**4d) [a] Indicator No. 2:**
5a) GENERAL CRITERIA Describe the MONITORING APPROACH used to measure the indicators:		EPA Method 22	
[b] Establish the appropriate INDICATOR RANGE or the procedures for establishing the indicator range which provides a reasonable assurance of compliance:		No visible emissions	
5b) PERFORMANCE CRITERIA Provide the SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA, such as detector location, installation specifications, and minimum acceptable accuracy:		Measurements are made at the associated emissions point	
[c] For new or modified monitoring equipment, provide VERIFICATION PROCEDURES, including manufacturer's recommendations, TO CONFIRM THE OPERATIONAL STATUS of the monitoring:		NA	
Provide QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.):		The observer will be famliar with EPA Method 22 and follow Method 22-like procedures	
[d] Provide the MONITORING FREQUENCY:		Monthly	
Provide the DATA COLLECTION PROCEDURES that will be used:		Manual log entries	
Provide the DATA AVERAGING PERIOD for the purpose of determining whether an excursion or exceedance has occurred:		NA	

[a] Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

[b] Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

[c] The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

[d] Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

RATIONALE AND JUSTIFICATION

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide rationale and justification for the selection of EACH indicator and monitoring approach and EACH indicator range in order to meet the submittal requirements specified in 40 CFR §64.4.

6a) PSEU Designation:	6b) Regulated Air Pollutant:
D1, C1, C8, PV, C7	PM/PM10/PM 2.5

7) **INDICATORS AND THE MONITORING APPROACH**: Provide the rationale and justification for the selection of the indicators and the monitoring approach used to measure the indicators. Also provide any data supporting the rationale and justification. Explain the reasons for any differences between the verification of operational status or the quality assurance and control practices proposed, and the manufacturer's recommendations. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

Visible emissions will be used as an indicator. Normal process operation will not produce conditions that adversely affect the baghouse, so no process operation parameters will be monitored.

Visible emissions from the baghouse exhaust (BF) will be monitored monthly using EPA Reference Method 22-like procedures. The observation will be performed for a sufficient time interval, but not less than one minute and will be recorded on a log by the observer.

8) **INDICATOR RANGES**: Provide the rationale and justification for the selection of the indicator ranges. The rationale and justification shall indicate how **EACH** indicator range was selected by either a COMPLIANCE OR PERFORMANCE TEST, a TEST PLAN AND SCHEDULE, or by ENGINEERING ASSESSMENTS. Depending on which method is being used for each indicator range, include the specific information required below for that specific indicator range. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

- COMPLIANCE OR PERFORMANCE TEST (Indicator ranges determined from control device operating parameter data obtained during a compliance or performance test conducted under regulatory specified conditions or under conditions representative of maximum potential emissions under anticipated operating conditions. Such data may be supplemented by engineering assessments and manufacturer's recommendations). The rationale and justification shall INCLUDE a summary of the compliance or performance test results that were used to determine the indicator range, and documentation indicating that no changes have taken place that could result in a significant change in the control system performance or the selected indicator ranges since the compliance or performance test was conducted.

- TEST PLAN AND SCHEDULE (Indicator ranges will be determined from a proposed implementation plan and schedule for installing, testing, and performing any other appropriate activities prior to use of the monitoring). The rationale and justification shall INCLUDE the proposed implementation plan and schedule that will provide for use of the monitoring as expeditiously as practicable after approval of this CAM plan, except that in no case shall the schedule for completing installation and beginning operation of the monitoring exceed 180 days after approval.

- ENGINEERING ASSESSMENTS (Indicator Ranges or the procedures for establishing indicator ranges are determined from engineering assessments and other data, such as manufacturers' design criteria and historical monitoring data, because factors specific to the type of monitoring, control device, or PSEU make compliance or performance testing unnecessary). The rationale and justification shall INCLUDE documentation demonstrating that compliance testing is not required to establish the indicator range.

RATIONALE AND JUSTIFICATION:

The selected indicator range is no visible emissions. When an excursion occurs, corrective action will be initiated beginning with an evaluation of the occurrence to determine the action required to correct the situation.

All excursions will be documented and reported. An indicator range of no visible emissions was selected because:

(1) an increase in the visible emissions is indicative of an incease in particulate emissions; and
(2) a monitoring technique which does not require a Method 9 observer is desired.

Although Method 22 applies to fugitive sources, the visible/no visible emissions observation technique of Method 22 can be applied to ducted emissions; i.e., Method 22-like observations.

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

For definitions and information about the CAM rule, please refer to 40 CFR Part 64. Additional information (including guidance documents) may also be found at http://www.epa.gov/ttn/emc/cam.html

CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to **EACH** regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet **all** of the following criteria (*If No, then the remainder of this form need not be completed*): ☒ YES ☐ NO

a. The PSEU is located at a major source that is required to obtain a Title V permit;

b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is NOT exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
- Stratospheric Ozone Protection Requirements.
- Acid Rain Program Requirements.
- Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
- An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).

c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;

d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND

e. The PSEU is NOT an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

☒ RENEWAL APPLICATION. **ALL** PSEUs for which a CAM plan has NOT yet been approved need to be addressed in this CAM plan submittal.

☐ INITIAL APPLICATION (submitted after 4/20/98). **ONLY** large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.

☐ SIGNIFICANT MODIFICATION TO LARGE PSEUs. **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, Only address the appropriate monitoring requirements affected by the significant modification.

3) [a] BACKGROUND DATA AND INFORMATION					
Complete the following table for **all** PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU In order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.					
PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	[b] EMISSION LIMITATION or STANDARD	[c] MONITORING REQUIREMENT
Fiber Prior to the Press (FLa)	Material Transfer	PM/PM10/	BH2	45 CSR § 7-3.1	Periodic monitoring of visible emissions (EPA Method 22)
EXAMPLE Boiler No. 1	Wood-Fired Boiler	PM	Multiclone	45CSR§2-4.1.c.; 9.0 lb/hr	Monitor pressure drop across multiclone: Weekly inspection of multiclone

[a] If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

[b] Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

[c] Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

CAM MONITORING APPROACH CRITERIA

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for EACH indicator selected for EACH PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. if more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.

4a) PSEU Designation: Fiber Prior to the Press (FLa)	**4b) Pollutant:** PM/PM10/	**4c) [a] Indicator No. 1:** Periodic monitoring of visible emissions	**4d) [a] Indicator No. 2:**
5a) GENERAL CRITERIA Describe the MONITORING APPROACH used to measure the indicators:		EPA Method 22	
[b] Establish the appropriate INDICATOR RANGE or the procedures for establishing the indicator range which provides a reasonable assurance of compliance:		No visible emissions	
5b) PERFORMANCE CRITERIA Provide the SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA, such as detector location, installation specifications, and minimum acceptable accuracy:		Measurements are made at the associated emissions point	
[c] For new or modified monitoring equipment, provide VERIFICATION PROCEDURES, including manufacturer's recommendations, TO CONFIRM THE OPERATIONAL STATUS of the monitoring:		NA	
Provide QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.):		The observer will be famliar with EPA Method 22 and follow Method 22-like procedures	
[d] Provide the MONITORING FREQUENCY:		Monthly	
Provide the DATA COLLECTION PROCEDURES that will be used:		Manual log entries	
Provide the DATA AVERAGING PERIOD for the purpose of determining whether an excursion or exceedance has occurred:		NA	

[a] Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

[b] Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

[c] The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

[d] Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

RATIONALE AND JUSTIFICATION

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide rationale and justification for the selection of EACH indicator and monitoring approach and EACH indicator range in order to meet the submittal requirements specified in 40 CFR §64.4.

6a) PSEU Designation:	6b) Regulated Air Pollutant:
Fiber Prior to the Press (FLa)	PM/PM10/

7) **INDICATORS AND THE MONITORING APPROACH**: Provide the rationale and justification for the selection of the indicators and the monitoring approach used to measure the indicators. Also provide any data supporting the rationale and justification. Explain the reasons for any differences between the verification of operational status or the quality assurance and control practices proposed, and the manufacturer's recommendations. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

Visible emissions will be used as an indicator. Normal process operation will not produce conditions that adversely affect the baghouse, so no process operation parameters will be monitored.

Visible emissions from the baghouse exhaust will be monitored monthly using EPA Reference Method 22-like procedures. The observation will be performed for a sufficient time interval, but not less than one minute and will be recorded on a log by the observer.

8) **INDICATOR RANGES**: Provide the rationale and justification for the selection of the indicator ranges. The rationale and justification shall indicate how **EACH** indicator range was selected by either a COMPLIANCE OR PERFORMANCE TEST, a TEST PLAN AND SCHEDULE, or by ENGINEERING ASSESSMENTS. Depending on which method is being used for each indicator range, include the specific information required below for that specific indicator range. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

- COMPLIANCE OR PERFORMANCE TEST (Indicator ranges determined from control device operating parameter data obtained during a compliance or performance test conducted under regulatory specified conditions or under conditions representative of maximum potential emissions under anticipated operating conditions. Such data may be supplemented by engineering assessments and manufacturer's recommendations). The rationale and justification shall INCLUDE a summary of the compliance or performance test results that were used to determine the indicator range, and documentation indicating that no changes have taken place that could result in a significant change in the control system performance or the selected indicator ranges since the compliance or performance test was conducted.

- TEST PLAN AND SCHEDULE (Indicator ranges will be determined from a proposed implementation plan and schedule for installing, testing, and performing any other appropriate activities prior to use of the monitoring). The rationale and justification shall INCLUDE the proposed implementation plan and schedule that will provide for use of the monitoring as expeditiously as practicable after approval of this CAM plan, except that in no case shall the schedule for completing installation and beginning operation of the monitoring exceed 180 days after approval.

- ENGINEERING ASSESSMENTS (Indicator Ranges or the procedures for establishing indicator ranges are determined from engineering assessments and other data, such as manufacturers' design criteria and historical monitoring data, because factors specific to the type of monitoring, control device, or PSEU make compliance or performance testing unnecessary). The rationale and justification shall INCLUDE documentation demonstrating that compliance testing is not required to establish the indicator range.

RATIONALE AND JUSTIFICATION:

The selected indicator range is no visible emissions. When an excursion occurs, corrective action will be initiated beginning with an evaluation of the occurrence to determine the action required to correct the situation.

All excursions will be documented and reported. An indicator range of no visible emissions was selected because:

(1) an increase in the visible emissions is indicative of an incease in particulate emissions; and
(2) a monitoring technique which does not require a Method 9 observer is desired.

Although Method 22 applies to fugitive sources, the visible/no visible emissions observation technique of Method 22 can be applied to ducted emissions; i.e., Method 22-like observations.

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

For definitions and information about the CAM rule, please refer to 40 CFR Part 64. Additional information (including guidance documents) may also be found at http://www.epa.gov/ttn/emc/cam.html

CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to **EACH** regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet **all** of the following criteria (*If No, then the remainder of this form need not be completed*): ☒ YES ☐ NO

a. The PSEU is located at a major source that is required to obtain a Title V permit;

b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is NOT exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
- Stratospheric Ozone Protection Requirements.
- Acid Rain Program Requirements.
- Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
- An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).

c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;

d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND

e. The PSEU is NOT an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

☒ RENEWAL APPLICATION. **ALL** PSEUs for which a CAM plan has NOT yet been approved need to be addressed in this CAM plan submittal.

☐ INITIAL APPLICATION (submitted after 4/20/98). **ONLY** large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.

☐ SIGNIFICANT MODIFICATION TO LARGE PSEUs. **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, Only address the appropriate monitoring requirements affected by the significant modification.

3) [a] BACKGROUND DATA AND INFORMATION					
Complete the following table for **all** PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU In order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.					
PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	[b] EMISSION LIMITATION or STANDARD	[c] MONITORING REQUIREMENT
FLa, FLSN, FLSS, C2, C3, C4, C6	Material Transfer	PM/PM10/	BH3	45 CSR § 7-3.1	Periodic monitoring of visible emissions (EPA Method 22)
EXAMPLE Boiler No. 1	Wood-Fired Boiler	PM	Multiclone	45CSR§2-4.1.c.; 9.0 lb/hr	Monitor pressure drop across multiclone: Weekly inspection of multiclone

[a] If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

[b] Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

[c] Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

CAM MONITORING APPROACH CRITERIA

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for EACH indicator selected for EACH PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. if more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.

4a) PSEU Designation: FLa, FLSN, FLSS, C2, C3, C4, C6	**4b) Pollutant:** PM/PM10/	**4c) [a] Indicator No. 1:** Periodic monitoring of visible emissions	**4d) [a] Indicator No. 2:**
5a) GENERAL CRITERIA Describe the MONITORING APPROACH used to measure the indicators:		EPA Method 22	
[b] Establish the appropriate INDICATOR RANGE or the procedures for establishing the indicator range which provides a reasonable assurance of compliance:		No visible emissions	
5b) PERFORMANCE CRITERIA Provide the SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA, such as detector location, installation specifications, and minimum acceptable accuracy:		Measurements are made at the associated emissions point	
[c] For new or modified monitoring equipment, provide VERIFICATION PROCEDURES, including manufacturer's recommendations, TO CONFIRM THE OPERATIONAL STATUS of the monitoring:		NA	
Provide QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.):		The observer will be famliar with EPA Method 22 and follow Method 22-like procedures	
[d] Provide the MONITORING FREQUENCY:		Monthly	
Provide the DATA COLLECTION PROCEDURES that will be used:		Manual log entries	
Provide the DATA AVERAGING PERIOD for the purpose of determining whether an excursion or exceedance has occurred:		NA	

[a] Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

[b] Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

[c] The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

[d] Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

RATIONALE AND JUSTIFICATION

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide rationale and justification for the selection of EACH indicator and monitoring approach and EACH indicator range in order to meet the submittal requirements specified in 40 CFR §64.4.

6a) PSEU Designation:	6b) Regulated Air Pollutant:
FLa, FLSN, FLSS, C2, C3, C4, C6	PM/PM10/

7) **INDICATORS AND THE MONITORING APPROACH**: Provide the rationale and justification for the selection of the indicators and the monitoring approach used to measure the indicators. Also provide any data supporting the rationale and justification. Explain the reasons for any differences between the verification of operational status or the quality assurance and control practices proposed, and the manufacturer's recommendations. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

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- COMPLIANCE OR PERFORMANCE TEST (Indicator ranges determined from control device operating parameter data obtained during a compliance or performance test conducted under regulatory specified conditions or under conditions representative of maximum potential emissions under anticipated operating conditions. Such data may be supplemented by engineering assessments and manufacturer's recommendations). The rationale and justification shall INCLUDE a summary of the compliance or performance test results that were used to determine the indicator range, and documentation indicating that no changes have taken place that could result in a significant change in the control system performance or the selected indicator ranges since the compliance or performance test was conducted.

- TEST PLAN AND SCHEDULE (Indicator ranges will be determined from a proposed implementation plan and schedule for installing, testing, and performing any other appropriate activities prior to use of the monitoring). The rationale and justification shall INCLUDE the proposed implementation plan and schedule that will provide for use of the monitoring as expeditiously as practicable after approval of this CAM plan, except that in no case shall the schedule for completing installation and beginning operation of the monitoring exceed 180 days after approval.

- ENGINEERING ASSESSMENTS (Indicator Ranges or the procedures for establishing indicator ranges are determined from engineering assessments and other data, such as manufacturers' design criteria and historical monitoring data, because factors specific to the type of monitoring, control device, or PSEU make compliance or performance testing unnecessary). The rationale and justification shall INCLUDE documentation demonstrating that compliance testing is not required to establish the indicator range.

RATIONALE AND JUSTIFICATION:

The selected indicator range is no visible emissions. When an excursion occurs, corrective action will be initiated beginning with an evaluation of the occurrence to determine the action required to correct the situation.

All excursions will be documented and reported. An indicator range of no visible emissions was selected because:

(1) an increase in the visible emissions is indicative of an incease in particulate emissions; and
(2) a monitoring technique which does not require a Method 9 observer is desired.

Although Method 22 applies to fugitive sources, the visible/no visible emissions observation technique of Method 22 can be applied to ducted emissions; i.e., Method 22-like observations.

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

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CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to **EACH** regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet **all** of the following criteria (*If No, then the remainder of this form need not be completed*): ☒ YES ☐ NO

a. The PSEU is located at a major source that is required to obtain a Title V permit;

b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is NOT exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
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- Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
- An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).

c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;

d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND

e. The PSEU is NOT an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

☒ RENEWAL APPLICATION. **ALL** PSEUs for which a CAM plan has NOT yet been approved need to be addressed in this CAM plan submittal.

☐ INITIAL APPLICATION (submitted after 4/20/98). **ONLY** large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.

☐ SIGNIFICANT MODIFICATION TO LARGE PSEUs. **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, Only address the appropriate monitoring requirements affected by the significant modification.

3) [a] BACKGROUND DATA AND INFORMATION					
Complete the following table for **all** PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU In order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.					
PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	[b] EMISSION LIMITATION or STANDARD	[c] MONITORING REQUIREMENT
FLa, C5	Material Transfer	PM/PM10/	BH4	45 CSR § 7-3.1	Periodic monitoring of visible emissions (EPA Method 22)
EXAMPLE Boiler No. 1	Wood-Fired Boiler	PM	Multiclone	45CSR§2-4.1.c.; 9.0 lb/hr	Monitor pressure drop across multiclone: Weekly inspection of multiclone

[a] If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

[b] Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

[c] Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

CAM MONITORING APPROACH CRITERIA			
Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for EACH indicator selected for EACH PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. if more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.			
4a) PSEU Designation: FLa, C5	**4b) Pollutant:** PM/PM10/	**4c) [a] Indicator No. 1:** Periodic monitoring of visible emissions	**4d) [a] Indicator No. 2:**
5a) GENERAL CRITERIA Describe the MONITORING APPROACH used to measure the indicators:		EPA Method 22	
[b] Establish the appropriate INDICATOR RANGE or the procedures for establishing the indicator range which provides a reasonable assurance of compliance:		No visible emissions	
5b) PERFORMANCE CRITERIA Provide the SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA, such as detector location, installation specifications, and minimum acceptable accuracy:		Measurements are made at the associated emissions point	
[c] For new or modified monitoring equipment, provide VERIFICATION PROCEDURES, including manufacturer's recommendations, TO CONFIRM THE OPERATIONAL STATUS of the monitoring:		NA	
Provide QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.):		The observer will be famliar with EPA Method 22 and follow Method 22-like procedures	
[d] Provide the MONITORING FREQUENCY:		Monthly	
Provide the DATA COLLECTION PROCEDURES that will be used:		Manual log entries	
Provide the DATA AVERAGING PERIOD for the purpose of determining whether an excursion or exceedance has occurred:		NA	

[a] Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

[b] Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

[c] The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

[d] Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

RATIONALE AND JUSTIFICATION

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide rationale and justification for the selection of EACH indicator and monitoring approach and EACH indicator range in order to meet the submittal requirements specified in 40 CFR §64.4.

6a) PSEU Designation:	6b) Regulated Air Pollutant:
FLa, C5	PM/PM10/

7) **INDICATORS AND THE MONITORING APPROACH**: Provide the rationale and justification for the selection of the indicators and the monitoring approach used to measure the indicators. Also provide any data supporting the rationale and justification. Explain the reasons for any differences between the verification of operational status or the quality assurance and control practices proposed, and the manufacturer's recommendations. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

Visible emissions will be used as an indicator. Normal process operation will not produce conditions that adversely affect the baghouse, so no process operation parameters will be monitored.

Visible emissions from the baghouse exhaust will be monitored monthly using EPA Reference Method 22-like procedures. The observation will be performed for a sufficient time interval, but not less than one minute and will be recorded on a log by the observer.

8) **INDICATOR RANGES**: Provide the rationale and justification for the selection of the indicator ranges. The rationale and justification shall indicate how **EACH** indicator range was selected by either a COMPLIANCE OR PERFORMANCE TEST, a TEST PLAN AND SCHEDULE, or by ENGINEERING ASSESSMENTS. Depending on which method is being used for each indicator range, include the specific information required below for that specific indicator range. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

- COMPLIANCE OR PERFORMANCE TEST (Indicator ranges determined from control device operating parameter data obtained during a compliance or performance test conducted under regulatory specified conditions or under conditions representative of maximum potential emissions under anticipated operating conditions. Such data may be supplemented by engineering assessments and manufacturer's recommendations). The rationale and justification shall INCLUDE a summary of the compliance or performance test results that were used to determine the indicator range, and documentation indicating that no changes have taken place that could result in a significant change in the control system performance or the selected indicator ranges since the compliance or performance test was conducted.

- TEST PLAN AND SCHEDULE (Indicator ranges will be determined from a proposed implementation plan and schedule for installing, testing, and performing any other appropriate activities prior to use of the monitoring). The rationale and justification shall INCLUDE the proposed implementation plan and schedule that will provide for use of the monitoring as expeditiously as practicable after approval of this CAM plan, except that in no case shall the schedule for completing installation and beginning operation of the monitoring exceed 180 days after approval.

- ENGINEERING ASSESSMENTS (Indicator Ranges or the procedures for establishing indicator ranges are determined from engineering assessments and other data, such as manufacturers' design criteria and historical monitoring data, because factors specific to the type of monitoring, control device, or PSEU make compliance or performance testing unnecessary). The rationale and justification shall INCLUDE documentation demonstrating that compliance testing is not required to establish the indicator range.

RATIONALE AND JUSTIFICATION:

The selected indicator range is no visible emissions. When an excursion occurs, corrective action will be initiated beginning with an evaluation of the occurrence to determine the action required to correct the situation.

All excursions will be documented and reported. An indicator range of no visible emissions was selected because:

(1) an increase in the visible emissions is indicative of an incease in particulate emissions; and
(2) a monitoring technique which does not require a Method 9 observer is desired.

Although Method 22 applies to fugitive sources, the visible/no visible emissions observation technique of Method 22 can be applied to ducted emissions; i.e., Method 22-like observations.

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Tue, Apr 9, 2024 at 12:48 PM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Sarah,

Thank you for the response. Eric is out of town the week; we'll respond early next week.

Randy Taylor, ASP | EHS Manager

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Monday, April 1, 2024 4:30 PM
To: Randy Taylor <rtaylor@jeldwen.com>; Eric Rapp <erapp@jeldwen.com>
[Quoted text hidden]

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Mon, Apr 1, 2024 at 4:30 PM
To: Randy Taylor <rtaylor@jeldwen.com>, erapp@jeldwen.com

Thank you for speaking with me today.

As we discussed, I do not think that CAM can be claimed to be inapplicable to the baghouses BH1a, BH1b, BH1c, BH2, BH3, and BH4 with the information provided.

BH1a, BH1b, and BH1c:

- Although emissions from these baghouses are routed to the biofilter, PM emissions are ultimately controlled by the baghouses. Biofilters are intended to control VOCs and certain HAPs. With the table titled "Biofilter (BF-E18) Estimated Emissions" in Attachment I: Supporting Emission Calculations, a footnote to the table states that the manufacturer of the biofilter provided that the biofilter has a 0% control efficiency for TSP and PM-10. Therefore, I don't think that the biofilter can be claimed to be the control device that ensures that the PM-emission limit is met.

BH2, BH3, and BH4:

- The definition in §64.1 specifies that inherent process equipment means "...material recovery equipment that the owner or operator documents is installed and operated primarily for purposes other than compliance with air pollution regulations." Particulate matter emissions from baghouses are subject to federally enforceable limits under the current NSR permit as well as 45CSR7. Compliance with these limits is dependent on the operation of the baghouses as a control device as specified in Table 9 of Attachment I: Supporting Emission Calculations. Therefore, although the baghouses are used to recover material, the primary purpose of each baghouse is to control particulate matter to ensure that the applicable emission limits are met.
- Additionally, the criteria for determining whether equipment is air pollution control equipment or process equipment was outlined by the EPA in a letter dated November 27, 1995 (link to letter: Criteria for Determining whether Equipment is Air Pollution Control Equipment or Process Equipment | US EPA). This letter provides the following questions to consider when making a determination:
    - Question 1: Is the primary purpose of the equipment to control air pollution?
    - Question 2: Where the equipment is recovering product, how do the cost savings from the product recovery compare to the cost of the equipment?
    - Question 3: Would the equipment be installed if no air quality regulations are in place?

  Given that the baghouses collect waste particulate matter from manufacturing operations but are not directly involved in the manufacturing process, I do not think the baghouses BH2, BH3, and BH4 can be determined to be process equipment.

Please let me know if you have any questions or would like to discuss these topics further.

Thanks,
- Sarah

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Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Wed, Mar 27, 2024 at 1:44 PM
To: Randy Taylor <RTaylor@jeldwen.com>

10:30 AM on Monday should be fine for me.

Thanks,
- Sarah
[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Wed, Mar 27, 2024 at 7:58 AM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

10:30 am, thank you

Randy Taylor, ASP | EHS Manager

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Wednesday, March 27, 2024 7:12 AM
[Quoted text hidden]

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Wed, Mar 27, 2024 at 7:12 AM
To: Randy Taylor <RTaylor@jeldwen.com>

I should be available any time on Monday. What time works best for you?

Thanks,
- Sarah
[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Wed, Mar 27, 2024 at 6:53 AM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Good morning Sarah,

Do you have some time on Monday? If not, we'll need to move it to the week of April 8th, whichever works for you.

Thanks,

Randy Taylor, ASP | Supervisor Health and Safety

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Tuesday, March 26, 2024 1:56 PM
To: Randy Taylor <RTaylor@jeldwen.com>
Subject: Re: Fw: Title V Permit - Request for Information - Application No. R30-06700095-2024

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Tue, Mar 26, 2024 at 1:56 PM
To: Randy Taylor <RTaylor@jeldwen.com>

Hi, Randy.

Sorry for the late reply. I've had a few other assignments that I've been focused on, but I was able to look into the requested changes for CAM's applicability to the baghouses BH1a to BH1c, BH2, BH3, and BH4. After further review, I do not think that CAM can be claimed to be inapplicable to the baghouses based on the information provided. Would you be available to speak further about this sometime next week?

Thanks,
- Sarah

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Mon, Mar 18, 2024 at 11:48 AM
To: Sarah K Barron <sarah.k.barron@wv.gov>

Good morning Sarah,
Just checking to see if you've had an opportunity to review these forms.
Thank you,

Randy Taylor, ASP | EHS Manager

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Eric Rapp <ERapp@jeldwen.com>
Sent: Friday, February 2, 2024 3:35 PM
To: Sarah K Barron <sarah.k.barron@wv.gov>
Cc: Jay Borrell <Jborrell@jeldwen.com>; Randy Taylor <RTaylor@jeldwen.com>
Subject: RE: Title V Permit - Request for Information - Application No. R30-06700095-2024

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4 attachments

- **Section 3. Facility Wide Emissions.pdf** 209K
- **Attachment D - Equipment Table Revised.pdf** 149K
- **Attachment I - Supporting Emission Calculations.pdf** 484K
- **Att Es (2024-02).pdf** 974K

Section 3: Facility-Wide Emissions

23. Facility-Wide Emissions Summary [Tons per Year]	
Criteria Pollutants	Potential Emissions
Carbon Monoxide (CO)	92.6
Nitrogen Oxides (NO_X)	172.8
Lead (Pb)	0.0126
Particulate Matter ($PM_{2.5}$)[1]	18.0
Particulate Matter (PM_{10})[1]	23.0
Total Particulate Matter (TSP)	39.2
Sulfur Dioxide (SO_2)	6.6
Volatile Organic Compounds (VOC)	155.0
Hazardous Air Pollutants[2]	Potential Emissions
Total HAPs	16.90
Regulated Pollutants other than Criteria and HAP	Potential Emissions
N_2O	2.5
CH_4	19.0
CO_2	90,117

[1] $PM_{2.5}$ and PM_{10} are components of TSP.
[2] For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section.

ATTACHMENT D - Title V Equipment Table

(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Unit ID[1]	Emission Point ID[1]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Control Device[1]
TD	E1(fugitive)	Truck Dump	May 1, 1998	36,718 lbs/hr	None
FSE	E2a,b,c,d,e	East Furnish Storage Silo	May 1, 1998	46,563 ft3	None
FSW	E3a,b,c,d,e	West Furnish Storage Silo	May 1, 1998	46,563 ft3	None
FLSN	E4	North Fuel Storage Silo	May 1, 1998	28,740 ft3	BH3 (Baghouse)
FLSS	E4	South Fuel Storage Silo	May 1, 1998	28,740 ft3	BH3 (Baghouse)
FLa	E4	Fiber Line Prior to Press (Former)	May 1, 1998	13,323 lbs/hr	BH2 (Baghouse)
C2	E4	Recycle Cyclone	May 1, 1998	1,370 lbs/hr	BH3 (Baghouse)
C3	E4	Waste Cyclone	May 1, 1998	2975 lbs/hr	BH3 (Baghouse)
C4	E4	Middle Reject Cyclone	May 1, 1998	1370 lbs/hr	BH3 (Baghouse)
C6	E4	Chip Cyclone	May 1, 1998	23,944 lbs/hr	BH3 (Baghouse)
B1	E5	Hogged Fuel-Fired Boiler	May 1, 1998	62.5 MMBtu/hr	MC (multiclone), ESP (Electrostatic Pre
B2	E6	Natural Gas-Fired Boiler	May 1, 1998	37.7 MMBtu/hr	None
D1	E18	Fiber Dryer	May 1, 1998	23,942 lbs/hr	BH1a, BH1b, BH1c, BF
C1	E18	Dryer Cyclone	May 1, 1998	30,250 lbs/hr	BH1a, BH1b, BH1c, BF
C8	E18	Dryer Baghouse Purge Cyclone	May 1, 1998	302.4 lbs/hr	BH1a, BH1b, BH1c, BF
PV	E18	Press Vents	May 1, 1998	23,942 lbs/hr	BH1a, BH1b, BH1c, BF
C7	E18	Press Vent Baghouse Purge Cyclone	2013	3.2 lbs/hr	BH1a, BH1b, BH1c, BF
FLa	E10	Fiber Line Prior to Press (Former)	May 1, 1998	21,591 SF-1/8/hr	BH2, BH3
FLb	E12	Fiber Line After Press (Sizer)	May 1, 1998	12,222 lbs/hr	BH4 (Baghouse)
C5	E12	Chip Cleaning Cyclone	May 1, 1998	2,602 lbs/hr	BH4 (Baghouse)
DC	E12	Die Cleaning Operation	2009	120 lbs/hr Na2CO3	BH4 (Baghouse)
PL	E13	Primeline (Ovens)	May 1, 1998	3.8 MMBtu/hr (total)	None
PL	E14	Primeline (Paint Booth)	May 1, 1998	71.0 gals/hr	None
~~DC2~~ CM	E15	Coating Manufacturing	April 1999	600 batches/yr	BH5 (Baghouse)
RV	E16	Rotary Valve	May 1, 1998	23,944 lbs/hr	None

[1]For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

ATTACHMENT D - Title V Equipment Table

(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Unit ID[1]	Emission Point ID[1]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Control Device[1]
~~DC~~ DB	E17	Die Coating	May 1, 1998	145 gal coating/yr	None
CV1-5	Fugitive	Conveyors	May 1, 1998	106.2 tons/hr	None
RS	Fugitive	Rotary Classifier	May 1, 1998	40 ton/hr	None
ST1	Fugitive	Resin Storage Tank 1	May 1, 1998	7,000 gallons	None
ST2	Fugitive	Resin Storage Tank 2	May 1, 1998	7,000 gallons	None
ST3	Fugitive	Wax Storage Tank	May 1, 1998	10,000 gallons	None
ST4	Fugitive	Coating Storage Tank	May 1, 1999	10,000 gallons	None
ST5	Fugitive	Coating Storage Tank	April 1, 1999	6,000 gallons	None
ST6	Fugitive	Coating Storage Tank	May 1, 1999	10,000 gallons	None
ST7	Fugitive	Coating Storage Tank	May 1, 1999	10,000 gallons	None
ST8	Fugitive	Coating Storage Tank	May 1, 1999	10,000 gallons	None
ST9	Fugitive	Coating Storage Tank	April 1, 1999	6,000 gallons	None

[1]For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

JELD-WEN WINDOWS & DOORS

Table 1
Production and Process Rates
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Source	Maximum Rates				
	Hourly			Annual	
Maximum Production					
Fiber Dryer Throughput	23,942	BD-lbs	(1)	47,500	BDT
Door Skins	21,591	SF-1/8"	(c)	179,683,869	SF-1/8"
Hogged Door Skins	10,796	SF-1/8"	(2)	26,952,580	SF-1/8"
Maximum Combustion Sources					
Wood-Fired Boiler - Combustion	62.5	MMBtu	(3)	520,125	MMBtu
Wood-Fired Boiler - Fuel Usage	7,805	BD-lbs	(f)	32,475	BDT
Natural Gas Boiler	37.7	MMBtu	(3)	313,739	MMBtu
Natural Gas Furnish Dryer	20.0	MMBtu	(3)	166,440	MMBtu
Primeline Oven #1	1.4	MMBtu	(3)	11,651	MMBtu
Primeline Oven #3	2.4	MMBtu	(3)	19,973	MMBtu
Maximum Truck Dump Throughput					
Purchased Furnish	36,718	BD-lbs	(g)	47,514	BDT
Purchased Wood Fuel	2,585	BD-lbs	(i)	10,190	BDT
Maximum Raw Material Throughput					
Primer Usage	71.0	gallons	(k)	534,560	gallons
Maximum Hours of Operation					
Facility Hours		--		8,322	hours
Truck Dump Hours		--		7,884	hours

JELD-WEN WINDOWS & DOORS

Table 2

Wood-Fired Boiler (B1 - E5) Criteria Pollutant Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MMBtu)		Maximum Emissions (1)	
			lbs/hr (a)	tons/yr (b)
TSP	1.64E-02	(2)	1.03	4.28
PM10	1.64E-02	(3)	1.03	4.28
PM 2.5	1.64E-02	(7)	1.03	4.28
SO2	2.50E-02	(4)	1.56	6.50
CO	3.24E-01	(2)	20.25	84.27
NOx	5.32E-01	(2)	33.24	138.30
VOC	1.73E-02	(2)	1.08	4.51
Lead	4.80E-05	(4)	0.003	0.01
N_2O	9.26E-03	(5)	0.58	2.41
CH_4	7.05E-02	(5)	4.41	18.35
CO_2	207	(5)	12,925	53779.20

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly boiler combustion [MMBtu/hr]) x (emission factor [lbs/MMBtu])

Maximum hourly boiler combustion [MMBtu/hr] = 62.5 (6)

(b) Maximum annual emissions (tons/yr) = (maximum annual boiler combustion [MMBtu/yr]) x (emission factor [lbs/MMBtu]) / (2000 lbs/ton)

Maximum annual boiler combustion [MMBtu/yr] = 520,125 (6)

Notes:

(1) All emission estimates include the effect of applied control devices.

(2) Emission factors were taken from a source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia facility in April 2003. Two standard deviations were added to the results as a safety factor.

(3) Calculations assume that 100% of TSP is PM_{10}.

(4) Emission factors were taken from AP-42, Chapter 1.6, Wood Residue Combustion (9/2003).

(5) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

(6) See Table 1, Production and Process Rates.

(7) Calculations assume that 100% of TSP is PM2.5

JELD-WEN WINDOWS & DOORS

Table 3
Wood-Fired Boiler (B1 - E5) HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMBtu)		Maximum Emissions	
			lbs/hr [(a)]	tons/yr [(b)]
1,1,1-Trichloroethane	3.1E-05	(1)	1.9E-03	8.1E-03
1,2-Dichloroethane	2.9E-05	(1)	1.8E-03	7.5E-03
1,2-Dichloropropane	3.3E-05	(1)	2.1E-03	8.6E-03
2,4-Dinitrophenol	1.8E-07	(1)	1.1E-05	4.7E-05
4-Nitrophenol	1.1E-07	(1)	6.9E-06	2.9E-05
Acenaphthene	9.1E-07	(1)	5.7E-05	2.4E-04
Acenaphthylene	5.0E-06	(1)	3.1E-04	1.3E-03
Acetaldehyde	8.3E-04	(1)	5.2E-02	2.2E-01
Acetophenone	3.2E-09	(1)	2.0E-07	8.3E-07
Acrolein	4.0E-03	(1)	2.5E-01	1.0E+00
Anthracene	3.0E-06	(1)	1.9E-04	7.8E-04
Antimony	7.9E-06	(2)	4.9E-04	2.1E-03
Arsenic	2.2E-05	(2)	1.4E-03	5.7E-03
Benz(a)anthracene	6.5E-08	(1)	4.1E-06	1.7E-05
Benzene	4.2E-03	(1)	2.6E-01	1.1
Benzo(a)pyrene	2.6E-06	(1)	1.6E-04	6.8E-04
Benzo(b)fluoranthene	1.0E-07	(1)	6.3E-06	2.6E-05
Benzo(g,h,i)perylene	9.3E-08	(1)	5.8E-06	2.4E-05
Benzo(k)fluoranthene	3.6E-08	(1)	2.3E-06	9.4E-06
Beryllium	1.1E-06	(2)	6.9E-05	2.9E-04
bis(2-Ethylhexyl)phthalate	4.7E-08	(1)	2.9E-06	1.2E-05
Bromomethane	1.5E-05	(1)	9.4E-04	3.9E-03
Cadmium	4.1E-06	(2)	2.6E-04	1.1E-03
Carbon tetrachloride	4.5E-05	(1)	2.8E-03	1.2E-02
Chlorine	7.9E-04	(1)	4.9E-02	2.1E-01
Chlorobenzene	3.3E-05	(1)	2.1E-03	8.6E-03
Chloroform	2.8E-05	(1)	1.8E-03	7.3E-03
Chloromethane	2.3E-05	(1)	1.4E-03	6.0E-03
Chromium (total)	2.1E-05	(2)	1.3E-03	5.5E-03
Chrysene	3.8E-08	(1)	2.4E-06	9.9E-06
Cobalt	6.5E-06	(2)	4.1E-04	1.7E-03
Dibenzo(a,h)anthracene	9.1E-09	(1)	5.7E-07	2.4E-06
Dichloromethane	2.9E-04	(1)	1.8E-02	7.5E-02
Ethylbenzene	3.1E-05	(1)	1.9E-03	8.1E-03
Fluoranthene	1.6E-06	(1)	1.0E-04	4.2E-04
Fluorene	3.4E-06	(1)	2.1E-04	8.8E-04
Formaldehyde	4.4E-03	(1)	2.8E-01	1.1
Hydrogen chloride	1.9E-02	(1)	1.2	4.9
Indeno(1,2,3,c,d)pyrene	8.7E-08	(1)	5.4E-06	2.3E-05
Manganese	1.6E-03	(2)	1.0E-01	4.2E-01
Mercury	3.5E-06	(2)	2.2E-04	9.1E-04
Naphthalene	9.7E-05	(1)	6.1E-03	2.5E-02
Nickel	3.3E-05	(2)	2.1E-03	8.6E-03
Pentachlorophenol	5.1E-08	(1)	3.2E-06	1.3E-05
Phenanthrene	7.0E-06	(1)	4.4E-04	1.8E-03
Phenol	5.1E-05	(1)	3.2E-03	1.3E-02
Polychlorinated biphenyls	8.1E-09	(1)	5.1E-07	2.1E-06
Polychlorinated dioxins	1.7E-06	(1)	1.0E-04	4.3E-04
Polychlorinated furans	1.9E-09	(1)	1.2E-07	4.9E-07
Propionaldehyde	6.1E-05	(1)	3.8E-03	1.6E-02
Pyrene	3.7E-06	(1)	2.3E-04	9.6E-04
Selenium	2.8E-06	(2)	1.8E-04	7.3E-04
Styrene	1.9E-03	(1)	1.2E-01	0.49
Tetrachloroethylene	3.8E-05	(1)	2.4E-03	9.9E-03
Toluene	9.2E-04	(1)	5.8E-02	2.4E-01
Trichloroethylene	3.0E-05	(1)	1.9E-03	7.8E-03
Vinyl chloride	1.8E-05	(1)	1.1E-03	4.7E-03
Xylenes	2.5E-05	(1)	1.6E-03	6.5E-03
	Total HAPs		2.42	10.05

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly boiler combustion [MMBtu/hr]) x (emission factor [lbs/MMBtu])

Maximum hourly boiler combustion [MMBtu/hr] = 62.5 (3)

(b) Maximum annual emissions (tons/yr) = (maximum annual boiler combustion [MMBtu/yr]) x (emission factor [lbs/MMBtu]) / (2000 lbs/ton)

Maximum annual boiler combustion [MMBtu/yr] = 520,125 (3)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.6, Table 1.6-3, Emission Factors for Speciated Organic Compounds from Wood Residue Combustion (September 2003).

(2) Emission factors were taken from AP-42, Chapter 1.6, Table 1.6-4, Emission Factors for Trace Elements from Wood Residue Combustion (September 2003).

(3) See Table 1, Production and Process Rates.

JELD-WEN WINDOWS & DOORS

Table 4

Natural Gas-Fired Boiler (B2 - E6) Criteria Pollutant Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [(a)]	tons/yr [(b)]
TSP	7.6	(1)	0.27	1.11
PM10	5.7	(2)	0.20	0.83
PM 2.5	1.9	(2)	0.07	0.28
SO2	0.6	(1)	0.02	0.09
CO	0.7	(3)	0.02	0.10
NOx	170	(3)	5.97	24.83
VOC	5.5	(1)	0.19	0.80
Lead	5.0E-04	(1)	1.75E-05	0.00007
N_2O	2.68E-04	(4)	0.01	0.04
CH_4	2.68E-03	(4)	0.10	0.42
CO_2	142	(4)	5,353	22,275.37

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly boiler combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly boiler combustion [MMBtu/hr] = 37.7 (5)

Natural gas heating value [MMBtu/MMscf] = 1,077 (6)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual boiler combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual boiler combustion [MMBtu/yr] = 313,739 (5)

Natural gas heating value [MMBtu/MMscf] = 1,077 (6)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Natural Gas Combustion (7/1998).

(2) Emission factor taken from AP-42, Chapter 1.4, Natural Gas Combustion. PM10= Condensable, PM2.5 = Filterable

(3) Emission factors were taken from an engineering source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia facility in April 2003.
The emission factors are equal to the average of the test values plus two standard deviations.

(4) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

(5) See Table 1, Production and Process Rates.

(6) Provided by Dominon Hope Natural Gas.

Table 5
Natural Gas-Fired Boiler (B2 - E6) HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [a]	tons/yr [b]
Acenaphthene	1.8E-06	(1)	6.3E-08	2.6E-07
Acenaphthylene	1.8E-06	(1)	6.3E-08	2.6E-07
Anthracene	2.4E-06	(1)	8.4E-08	3.5E-07
Arsenic	2.0E-04	(2)	7.0E-06	2.9E-05
Benz(a)anthracene	1.8E-06	(1)	6.3E-08	2.6E-07
Benzene	2.1E-03	(1)	7.4E-05	3.1E-04
Benzo(a)pyrene	1.2E-06	(1)	4.2E-08	1.7E-07
Benzo(b)fluoranthene	1.8E-06	(1)	6.3E-08	2.6E-07
Benzo(g,h,i)perylene	1.2E-06	(1)	4.2E-08	1.7E-07
Benzo(k)fluoranthene	1.8E-06	(1)	6.3E-08	2.6E-07
Beryllium	1.2E-05	(2)	4.2E-07	1.7E-06
Cadmium	1.1E-03	(2)	3.9E-05	1.6E-04
Chromium (total)	1.4E-03	(2)	4.9E-05	2.0E-04
Chrysene	1.8E-06	(1)	6.3E-08	2.6E-07
Cobalt	8.4E-05	(2)	2.9E-06	1.2E-05
Dibenzo(a,h)anthracene	1.2E-06	(1)	4.2E-08	1.7E-07
Fluoranthene	3.0E-06	(1)	1.1E-07	4.4E-07
Fluorene	2.8E-06	(1)	9.8E-08	4.1E-07
Formaldehyde	7.5E-02	(1)	2.6E-03	1.1E-02
Hexane	1.8E+00	(1)	6.3E-02	2.6E-01
Indeno(1,2,3,c,d)pyrene	1.8E-06	(1)	6.3E-08	2.6E-07
Manganese	3.8E-04	(2)	1.3E-05	5.5E-05
Mercury	2.6E-04	(2)	9.1E-06	3.8E-05
Naphthalene	6.1E-04	(1)	2.1E-05	8.9E-05
Nickel	2.1E-03	(2)	7.4E-05	3.1E-04
Phenanthrene	1.7E-05	(1)	6.0E-07	2.5E-06
Pyrene	5.0E-06	(1)	1.8E-07	7.3E-07
Selenium	2.4E-05	(2)	8.4E-07	3.5E-06

Table 5
Natural Gas-Fired Boiler (B2 - E6) HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [a]	tons/yr [b]
Toluene	3.4E-03	(1)	1.2E-04	5.0E-04
2-Methylnaphthalene	2.4E-05	(1)	8.4E-07	3.5E-06
3-Methylchloranthrene	1.8E-06	(1)	6.3E-08	2.6E-07
Dichlorobenzene	1.2E-03	(1)	4.2E-05	1.7E-04
7,12-Dimethylbenz(a)anthracene	1.6E-05	(1)	5.6E-07	2.3E-06
	Total HAPs		0.07	0.27

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly boiler combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly boiler combustion [MMBtu/hr] = 37.7 (3)

Natural gas heating value [MMBtu/MMscf] = 1,077 (4)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual boiler combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual boiler combustion [MMBtu/yr] = 313,739 (3)

Natural gas heating value [MMBtu/MMscf] = 1,077 (4)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-3, Emission Factors for Speciated Organic Compounds from Natural Gas Combustion (July 1998).

(2) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-4, Emission Factors for Metals from Natural Gas Combustion (July 1998).

(3) See Table 1, Production and Process Rates.

(4) Provided by Dominon Hope Natural Gas.

Table 6
Truck Dump (TD) Fugitive Particulate Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Pollutant	Fraction of Material (1) (%)	Maximum Emissions	
			lbs/hr (a)	tons/yr (b)
Truck Dump (TD)	TSP	0.0085%	3.12	4.9
	PM10	0.0021%	0.78	1.2
	PM 2.5	0.0021%	0.78	1.2
East Furnish Silo (FSE)	TSP	0.0085%	1.56	2.0
	PM10	0.0021%	0.39	0.5
	PM 2.5	0.0021%	0.39	0.5
West Furnish Silo (FSW)	TSP	0.0085%	1.56	2.0
	PM10	0.0021%	0.39	0.50
	PM 2.5	0.0021%	0.39	0.50
		Total TSP	6.24	8.9
		Total PM10/PM2.5	1.56	4.5

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly truck dump throughput [BD-lb/hr]) x (fraction of material [%])

Maximum hourly truck dump throughput [BD-lb/hr] =	36,718	(2)
Maximum hourly east furnish silo throughput [BD-lb/hr] =	18,359	(3)
Maximum hourly west furnish silo throughput [BD-lb/hr] =	18,359	(3)

(b) Maximum annual emissions (tons/yr) = (maximum annual truck dump throughput [BDT/yr]) x (fraction of material [%])

Maximum annual truck dump throughput [BDT/yr] =	57,704	(2)
Maximum annual east furnish silo throughput [BDT/yr] =	23,757	(3)
Maximum annual west furnish silo throughput [BDT/yr] =	23,757	(3)

Notes:

(1) Based on a particle size analysis of plytrim. Material less than 150 microns in diameter was conservatively assumed to be TSP.
The PM_{10} emissions were assumed to be 25% of the TSP emissions.
The PM2.5 emissions were assumed to be 25% of the TSP emissions.

(2) See Table 1, Production and Process Rates. Sum of the furnish and wood fuel truck dump throughputs.

(3) See Table 1, Production and Process Rates. Assumes each furnish silo receives half of the furnish truck dump throughput.

JELD-WEN WINDOWS & DOORS

Biofilter (BF-E18) Estimated Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor		Maximum Estimated Biofilter Outlet Emissions			
	lbs/hr	tons/yr	lbs/hr [(a)]		tons/yr [(b)]	
TSP	0.17	0.34	0.17	(a)	0.34	(b)
PM10	0.17	0.34	0.17	(a)	0.34	(b)
PM 2.5	0.17	0.34	0.17	(a)	0.34	(b)
VOC	30.65	67.84	29.11	(c)	64.45	(d)
CO	1.68	7.00	1.68	(a)	7.00	(b)
NOx	1.96	8.18	1.96	(a)	8.18	(b)
	(lbs/MSF-1/8")[(3)]					
Acetaldehyde	*0.00156*		0.03	(a)	0.14	(b)
Acrolein	*0.00079*		0.02	(a)	0.07	(b)
Benzene	*0.00070*		0.02	(a)	0.06	(b)
Formaldehyde	*0.00172*		0.04	(a)	0.15	(b)
Methanol	*0.01018*		0.22	(a)	0.91	(b)
Phenol	*0.00756*		0.16	(a)	0.68	(b)
Propionaldehyde	*0.00124*		0.03	(a)	0.11	(b)
MDI	*0.00003*		0.001	(a)	0.00	(b)
HAPs from NG Burner			0.03		0.14	
		Total HAP	0.51		2.1	

Calculations:

(a) Maximum hourly emissions at biofilter oulet (lbs/hr) = (maximum hourly emissions at biofilter inlet [lbs/hr]) x (1 - pollutant control efficiency [%])

(b) Maximum annual emissions at biofilter outlet (tons/yr) = (maximum annual emissions at biofilter inlet [tons/yr]) x (1 - pollutant control efficiency [%])

biofilter VOC control efficiency [%] =	5%	(2)
Methanol & Formaldehyde control efficiency [%] =	90%	(2)
Other HAP control efficiency [%] =	0%	(2)
biofilter TSP/PM10 control efficiency [%] =	0%	(2)

(c) Maximum hourly VOC emissions at biofilter oulet (lbs/hr) = (VOC emissions at inlet [lbs/hr]) * (1 - VOC control efficiency [%])

(d) Maximum hourly VOC emissions at biofilter oulet (tons/yr) = (VOC emissions at inlet [tons/yr]) * (1 - VOC control efficiency [%])

Notes:

(1) See Tables 7a - 7d and Table 9, *Non-detects were assumed at the detection level and are represented in italics*

(2) Provided by MET-PRO, biofilter manufacturer.

For conservacy, JELD-WEN is using 5% VOC control efficiency rather than the estimated 10% control efficiency provide by MET-PRO.

(3) Emissions factors derived from average of 2014, 2016, 2018, & 2019 Performance Tests including 2X standard deviation of each pollutant emission factor

Table 7a

Press Vents Emissions TO BIOFILTER

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MSF-1/8")		Maximum Uncontrolled Emissions **TO BIOFILTER**	
			lbs/hr [(a)]	tons/yr [(b)]
TSP / PM10 / PM2.5	0.042	(1)	9.05E-04	3.76E-03
VOC	0.145	(2)	3.13	13.03
CO	0.006	(3)	0.12	0.51
NOx	0.005	(3)	0.11	0.45

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly door skin production [MSF-1/8"/hr]) x (emission factor [lbs/MSF-1/8"]) x (1-baghouse TSP/PM10 control efficiency)

Maximum hourly door skin production [MSF-1/8"/hr] = 21.59 (4)

Press Vent baghouse TSP/PM10 control efficiency [%] = 99.90% (5)

(b) Maximum annual emissions (tons/yr) = (annual door skin production [MSF-1/8"/yr]) x (emission factor [lbs/MSF-1/8"]) x (1-baghouse TSP/PM10 control efficiency) / (2000 lbs/t

Maximum annual door skin production [MSF-1/8"/yr] = 179,683.9 (4)

Notes:

(1) Emission factors were taken from an engineering source test performed at the JELD-WEN, Wood Fiber Division - Craigsville, West Virginia facility in April 2003. Calculations assume that 100% of TSP is PM_{10} / $PM_{2.5}$.

(2) Emission factors were taken from AP-42, Chapter 10.6.3, Table 10.6.3-6, Medium Density Fiberboard Manufacturing (expressed as VOC as methane). This factor includes the emissions of some HAPs, however, may not accurately estimate emissions of VOC.

(3) Emission factors were taken from AP-42, Chapter 10.6.3, Medium Density Fiberboard (8/2002).

(4) See Table 1, Process Rates.

(5) See Table 9, Baghouse TSP/PM10 Emissions

JELD-WEN WINDOWS & DOORS

Table 7b

Furnish Dryer HAP/VOC Emissions TO BIOFILTER

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/ODT)		Maximum Uncontrolled Emissions **TO BIOFILTER**			
			lbs/hr [(a)]		tons/yr [(b)]	
VOC	2.29	(1)	30.65	(a)	67.8	(b)
CO		(2)	1.68	(2)	7.0	(2)
NOx		(2)	1.96	(2)	8.2	(2)

Calculations:

(a) Maximum hourly emissions (lbs/hr) = ((maximum hourly dryer throughput [dry-lbs/hr]) / 2000 x (emission factor [lbs/ODT]) + Press Vent emissions (PV) + Dryer natural gas combustion emissions

Maximum hourly dryer throughput [dry-lbs/hr] = 23,942 (3)

(b) Maximum annual emissions (tons/yr) = ((maximum annual dryer throughput [BDT/yr]) x (emission factor [lbs/ODT]) / 2000 + Press Vent emissions (PV) + Dryer natural gas combustion emissions

Maximum annual dryer throughput [dry-tons/yr] one line = 47,500 (3)

Notes:

(1) Emission factors were taken from AP-42, Chapter 10.6.3, Table 10.6.3-3, Medium Density Fiberboard Manufacturing (expressed as VOC as methane). This factor includes the emissions of some HAPs, however, may not accurately estimate emissions of VOC.

(2) See Table 7a, Press Vents Emissions TO BIOFILTER and Table 7d Furnish Dryer Natural Gas Combustion Criteria Pollutant Emissions TO BIOFILTER. Press Vent and Dryer natural gas combustions emissions are vented into the Dryer (D1) inlet.

(3) See Table 1, Production and Process Rates.

JELD-WEN WINDOWS & DOORS

Table 7c

Furnish Dryer Natural Gas Combustion Criteria Pollutant Emissions TO BIOFILTER
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MMscf)		Maximum Uncontrolled Emissions **TO BIOFILTER**	
			lbs/hr [(a)]	tons/yr [(b)]
TSP	7.60	(2)	7.1E-07	2.9E-06
PM10	5.70	(3)	5.3E-07	2.2E-06
PM2.5	1.90	(3)	1.8E-07	7.3E-07
SO2	0.60	(2)	0.01	0.05
CO	84.00	(2)	1.56	6.5
NOx	100.00	(2)	1.86	7.7
VOC	5.50	(2)	1.0E-01	4.2E-01
Lead	0.00	(2)	9.3E-06	3.9E-05
N_2O	0.00	(4)	5.36E-03	0.02
CH_4	0.00	(4)	0.05	0.22
CO_2	142.00	(4)	2,840	11,817

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly dryer combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly dryer combustion [MMBtu/hr] = 20.0 (5)

Natural gas heating value [MMBtu/MMscf] = 1,077 (6)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual dryer combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual dryer combustion [MMBtu/yr] = 166,440 (5)

Natural gas heating value [MMBtu/MMscf] = 1,077 (6)

Notes:

(1) Emissions from the furnish dryer are controlled by baghouses. Since the control device is not included in the AP-42 emission factor, particulate emissions include the control effect of the baghouses and the dryer cyclone.

(2) Emission factors were taken from AP-42, Chapter 1.4, Natural Gas Combustion (7/1998).

(3) Emission factor taken from AP-42, Chapter 1.4, Natural Gas Combustion. PM10= Condensable, PM2.5 = Filterable

(4) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

(5) See Table 1, Production and Process Rates.

(6) Provided by Dominon Hope Natural Gas.

JELD-WEN WINDOWS & DOORS

Table 7d

Furnish Dryer Natural Gas Combustion HAP Emissions TO BIOFILTER

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Uncontrolled Emissions **TO BIOFILTER**	
			lbs/hr [(a)]	tons/yr [(b)]
Acenaphthene	0.0000	(1)	3.3E-08	1.4E-07
Acenaphthylene	0.0000	(1)	3.3E-08	1.4E-07
Anthracene	0.0000	(1)	4.5E-08	1.9E-07
Arsenic	0.0002	(2)	3.7E-06	1.5E-05
Benz(a)anthracene	0.0000	(1)	3.3E-08	1.4E-07
Benzene	--	(3)	--	--
Benzo(a)pyrene	0.0000	(1)	2.2E-08	9.3E-08
Benzo(b)fluoranthene	0.0000	(1)	3.3E-08	1.4E-07
Benzo(g,h,i)perylene	0.0000	(1)	2.2E-08	9.3E-08
Benzo(k)fluoranthene	0.0000	(1)	3.3E-08	1.4E-07
Beryllium	0.0000	(2)	2.2E-07	9.3E-07
Cadmium	0.0011	(2)	2.0E-05	8.5E-05
Chromium (total)	0.0014	(2)	2.6E-05	1.1E-04
Chrysene	0.0000	(1)	3.3E-08	1.4E-07
Cobalt	0.0001	(2)	1.6E-06	6.5E-06
Dibenzo(a,h)anthracene	0.0000	(1)	2.2E-08	9.3E-08
Fluoranthene	0.0000	(1)	5.6E-08	2.3E-07
Fluorene	0.0000	(1)	5.2E-08	2.2E-07
Formaldehyde	--	(3)	--	--
Hexane	1.8000	(1)	3.3E-02	1.4E-01
Indeno(1,2,3,c,d)pyrene	0.0000	(1)	3.3E-08	1.4E-07
Manganese	0.0004	(2)	7.1E-06	2.9E-05
Mercury	0.0003	(2)	4.8E-06	2.0E-05
Naphthalene	0.0006	(1)	1.1E-05	4.7E-05
Nickel	0.0021	(2)	3.9E-05	1.6E-04
Phenanthrene	0.0000	(1)	3.2E-07	1.3E-06
Pyrene	0.0000	(1)	9.3E-08	3.9E-07
Selenium	0.0000	(2)	4.5E-07	1.9E-06

Table 7d

Furnish Dryer Natural Gas Combustion HAP Emissions TO BIOFILTER

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Uncontrolled Emissions **TO BIOFILTER**	
			lbs/hr [(a)]	tons/yr [(b)]
Toluene	0.0034	(1)	6.3E-05	2.6E-04
2-Methylnaphthalene	0.0000	(1)	4.5E-07	1.9E-06
3-Methylchloranthrene	0.0000	(1)	3.3E-08	1.4E-07
Dichlorobenzene	0.0012	(1)	2.2E-05	9.3E-05
7,12-Dimethylbenz(a)anthracene	0.0000	(1)	3.0E-07	1.2E-06
	Total HAPs		0.03	0.14

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly dryer combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly dryer combustion [MMBtu/hr] = 20.0 (4)

Natural gas heating value [MMBtu/MMscf] = 1,077 (5)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual dryer combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual dryer combustion [MMBtu/yr] = 166,440 (4)

Natural gas heating value [MMBtu/MMscf] = 1,077 (5)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-3, Emission Factors for Speciated Organic Compounds from Natural Gas Combustion (July 1998).

(2) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-4, Emission Factors for Metals from Natural Gas Combustion (July 1998).

(3) Benzene and formaldehyde emissions are included in Table 7 and were taken from source test data performed at the JELD-WEN, Wood Fiber Division, Craigsville, West Virginia facility.

(4) See Table 1, Production and Process Rates.

(5) Provided by Dominon Hope Natural Gas.

JELD-WEN WINDOWS & DOORS

Table 8

Rotary Valve (pre-refiner) VOC/HAP Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/ODT)		Maximum Emissions lbs/hr		Maximum Emissions tons/yr	
TSP	0.01% of Chip Cyclone Throughput	(1)	2.35	(a)	4.66	(b)
PM10	0.01% of Chip Cyclone Throughput	(1)	0.59	(a)	1.16	(b)
PM 2.5	0.01% of Chip Cyclone Throughput	(1)	0.59	(a)	1.16	(b)
VOC	6.73E-02	(2)	0.81	(c)	1.60	(d)
Acetaldehyde	*3.32E-04*	(3)	*3.97E-03*	(c)	*7.9E-03*	(d)
Acrolein	1.09E-02	(3)	1.31E-01	(c)	2.6E-01	(d)
Formaldehyde	6.64E-04	(3)	7.94E-03	(c)	1.6E-02	(d)
Methanol	3.23E-02	(3)	3.86E-01	(c)	7.7E-01	(d)
Phenol	*3.32E-04*	(3)	*3.97E-03*	(c)	*7.9E-03*	(d)
Propionaldehyde	*3.32E-04*	(3)	*3.97E-03*	(c)	*7.9E-03*	(d)
	Total HAP		0.54		1.07	

Calculations:

(a) Maximum hourly TSP emissions (lbs/hr) = ((maximum hourly chip cyclone throughput [OD-lbs/hr]) x (Chip Cyclone Efficiency [%]) x 0.01%)

Maximum Hourly Chip Cyclone Throughput [OD-lbs/hr] = 23,944 (4)

Chip Cyclone Efficiency = 98% (5)

(b) Maximum annual emissions (tons/year) = ((maximum annual chip cyclone throughput [ODT/yr]) x (Chip Cyclone Efficiency [%]) x 0.01%)

Maximum Annual Chip Cleaning Cyclone Throughput [ODT/year] = 47,504 (4)

(c) Maximum hourly VOC/HAP emissions (lbs/hr) = ((maximum hourly chip cyclone throughput [OD-lbs/hr])/2000 x (emission factor [lbs/ODT])

(d) Maximum annual VOC/HAP emissions (tons/year) = ((maximum annual chip cyclone throughput [ODT/yr]) x (emission factor [lbs/ODT]) / (2000 [lbs/ton])

Notes:

(1) Engineering Judgment Provided by JELD-WEN Engineering.
The PM2.5 emissions were assumed to be 25% of the TSP emissions.
The PM_{10} emissions were assumed to be 25% of the TSP emissions.

(2) VOC emission factor is based on sum of HAP emission factors times 1.5 safety factor. This factor is an estimation of VOCs from this emission point.

(3) Emission factors were taken from a MACT source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia facility on March 20,2007.
Non-detects were assumed at the detection level and are represented in italics

(4) See Table 1, Production and Process Rates.

(5) See Table 9, Baghouse TSP/PM10 Emissions.

JELD-WEN WINDOWS & DOORS

Table 9
Baghouse TSP/PM_{10} Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Source ID	Emission Point ID	Maximum Hourly Throughput (lbs/hr)	Maximum Annual Throughput (ODT/yr)	Control Efficiency (%)	Maximum Emissions (1)	
						lbs/hr (a)	tons/yr (b)
Dryer Cyclone	C1	E18	30,250 (2)	59,836 (2)	99.00% (12)	-- (17)	-- (17)
Dryer Baghouse #1	BH1a	E18	110.9 (3)	219.4 (3)	99.95% (13)	0.06 (21)	0.11
Dryer Baghouse #2	BH1b	E18	110.9 (3)	219.4 (3)	99.95% (13)	0.06 (21)	0.11
Dryer Baghouse #3	BH1c	E18	110.9 (3)	219.4 (3)	99.95% (13)	0.06 (21)	0.11
Dryer BH Purge Cyclone	C8	E18	302.4 (20)	598.06 (20)	90.00% (15)	-- (17)	-- (17)
Former Baghouse	BH2	E10	907 (4)	1,753 (4)	99.90% (14)	0.91	1.75
Waste Baghouse	BH3	E4	366 (5)	692 (5)	99.90% (14)	0.37	0.69
Recycle Cyclone	C2	E4	1,370 (6)	2,570 (6)	95.00% (15)	-- (17)	-- (17)
Waste Cyclone	C3	E4	2,975 (7)	5,632 (7)	90.00% (16)	-- (17)	-- (17)
Middle Reject Cyclone	C4	E4	1,370 (8)	2,570 (8)	95.00% (15)	-- (17)	-- (17)
Chip Cyclone	C6	E4	23,944 (9)	47,504 (9)	98.00% (15)	-- (17)	-- (17)
Sizer Baghouse	BH4	E12	12,222 (10)	8,444 (10)	99.95% (14)	6.11	4.22
Chip Cleaning Cyclone	C5	E12	2,602 (11)	1,465 (11)	95.00% (15)	-- (17)	-- (17)
Press Vent Baghouse	BH6	E18	3.6 (19)	9.3 (19)	99.90% (14)	3.58E-03 (22)	0.01
Press Vent BH Purge Cyclone	C7	E18	3.2 (20)	8.5 (20)	90.00% (15)	-- (17)	-- (17)

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly throughput [lbs/hr]) x (1 - control efficiency [%])

(b) Maximum annual emissions (tons/yr) = (maximum hourly throughput [ODT/yr]) x (1 - control efficiency [%])

Notes:

(1) JELD-WEN estimates the 29% of the particulate would actually be PM_{10} based on extrapolation of data provided the by the manufacturer on a similar product with larger particle size. For conservatism JELD-WEN's calculations assume that 100% of TSP is PM10.

(2) The dryer cyclone throughput is the sum of the refiner throughput plus the wax used for door skins and 20% of the shave off before the blender.

(3) The three dryer baghouses are equal to one-third of the dryer cyclone throughput after the cyclone control efficiency has been applied.

(4) The former baghouse throughput is equal to 1.5% of the former throughput plus exhaust from the chip cyclone.

(5) The waste baghouse throughput is equal to the waste and middle reject throughputs after the cyclone control efficiencies have been applied.

(6) The recycle cyclone throughput is equal to 5% of the material from the reject screw.

(7) The waste cyclone throughput is equal to the exhaust from the recycle cyclone and the fuel silos, 1.25% of the throughput of the shave off and trim, and material from the reject screw and former baghouse.

(8) The middle reject cyclone throughput is equal to the material from the reject screw.

(9) The chip cyclone throughput is equal to the throughput of the dryer plus the emissions of the rotary valve.

(10) The sizer baghouse throughput is equal to the exhaust from chip cleaning cyclone plus the material from skin sizer, 80% of the hogged skins, and the usage of sodium carbonate in the die cleaning process.

Soda Blasting (lbs/hr)= 120 (18)
Soda Blasting (ODT/yr)= 22 (18)

(11) The chip cleaning cyclone throughput is equal to 20% of the hogged skins.

(12) Conservative engineering judgment; manufacturer predicted efficiency is 99.468%.

(13) Based on data provided by Westec.

(14) Conservative engineering judgment; manufacturer predicted efficiency is 99.90%.

(15) Conservative engineering judgment for large wood particles and fiber in cyclone.

(16) Conservative engineering judgment for large wood particles and fiber in cyclone, with some fines.

(17) All cyclones at the facility vent to a baghouse. Cyclone emissions are included in the applicable baghouse emissions.

(18) Soda blasting estimates based on once daily cleaning of eight dies. Each die can require up to 15 lbs of sodium bicarbonate per cleaning event.

(19) press vent baghouse (BH6) throughput is equal to the press vent (PV) emissions + rotary valve emissions + press vent cyclone emissions

(20) The press vent cyclone throughput is equal to the press vent baghouse (BH6) throughput - press vent baghouse (BH6) emissions.

(21) Particulate emissions form the dryer baghouses (BH1a, BH1b, & BH1c) are vented to the biofilter (BF, E18)

(22) Particulate emissions form press vent baghouse (BH6) vent to the dryer (D1) air inlet which eventually vents to the biofilter (BF, E18)

JELD-WEN WINDOWS & DOORS

Table 10

Baghouse VOC/HAP Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Source ID	Emission Point ID	Maximum Hourly Throughput	Maximum Annual Throughput	Pollutant	Emission Factor [1] (lbs/SF-1/8")	Maximum Emissions	
							lbs/hr [a]	tons/yr [b]
Former Baghouse	BH2	E10	21,591 [2] (SF-1/8"/hr)	179,683,869 [2] (SF-1/8"/year)	Formaldehyde	3.5E-06 lbs/SF-1/8"	0.08	0.31
					Methanol	6.0E-06 lbs/SF-1/8"	0.13	0.54
Waste Baghouse	BH3	E4	21,591 [2] (SF-1/8"/hr)	179,683,869 [2] (SF-1/8"/year)	Formaldehyde	9.2E-06 lbs/SF-1/8"	0.20	0.82
Sizer Baghouse	BH4	E12	12,222 [3] (lbs/hr)	8,444 [3] (ODT/year)	Formaldehyde	1.9E-05 lbs/lb-waste	0.23	0.16
						Total VOC/HAP [4]	0.63	1.8

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly throughput [units/hr]) x (emission factor [lbs/unit])

(b) Maximum annual emissions (tons/yr) = (maximum annual throughput [SF-$^{1}/_{8}$"/year]) x (emission factor [lbs/SF-$^{1}/_{8}$"]) / 2000

or Maximum annual emissions (tons/yr) = (maximum annual throughput [ODT/yr]) x (emission factor [lbs/lb-waste])

Notes:

(1) Emission factors were taken from a MACT source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia facility on March and June 2007. All other pollutants were reported as non-detects.

(2) The former and waste baghouse throughputs have been conservatively assumed to equal the maximum press throughput.

(3) See Table 9, Baghouse Particulate Emissions.

(4) Total VOCs are the sum of the individual HAPs.

JELD-WEN WINDOWS & DOORS

Table 11a

Primeline Ovens (PL - E13) Natural Gas Combustion Criteria Pollutant Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [(a)]	tons/yr [(b)]
TSP	7.6	(1)	0.03	0.11
PM10	5.7	(2)	0.02	0.08
PM 2.5	1.9	(2)	0.01	0.03
SO2	0.6	(1)	0.002	0.01
CO	84	(1)	0.30	1.23
NOx	100	(1)	0.35	1.47
VOC	5.5	(1)	0.02	0.08
Lead	5.0E-04	(1)	1.8E-06	7.3E-06
N_2O	2.68E-04	(3)	1.0E-03	4.2E-03
CH_4	2.68E-03	(3)	0.01	0.04
CO_2	142	(3)	540	2,245

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly oven combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly oven combustion [MMBtu/hr] = 3.8 (4)

Natural gas heating value [MMBtu/MMscf] = 1,077 (5)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual oven combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual oven combustion [MMBtu/yr] = 31,624 (4)

Natural gas heating value [MMBtu/MMscf] = 1,077 (5)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Natural Gas Combustion (7/1998).

(2) Emission factor taken from AP-42, Chapter 1.4, Natural Gas Combustion. PM10= Condensable, PM2.5 = Filterable

(3) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

(4) See Table 1, Production and Process Rates (sum of Oven #1 and Oven #3; Oven #2 is steam-heated).

(5) Provided by Dominon Hope Natural Gas.

JELD-WEN WINDOWS & DOORS

Table 11b
Primeline Ovens (PL - E13) Natural Gas Combustion HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [a]	tons/yr [b]
Acenaphthene	1.8E-06	(1)	6.4E-09	2.6E-08
Acenaphthylene	1.8E-06	(1)	6.4E-09	2.6E-08
Anthracene	2.4E-06	(1)	8.5E-09	3.5E-08
Arsenic	2.0E-04	(2)	7.1E-07	2.9E-06
Benz(a)anthracene	1.8E-06	(1)	6.4E-09	2.6E-08
Benzene	2.1E-03	(1)	7.4E-06	3.1E-05
Benzo(a)pyrene	1.2E-06	(1)	4.2E-09	1.8E-08
Benzo(b)fluoranthene	1.8E-06	(1)	6.4E-09	2.6E-08
Benzo(g,h,i)perylene	1.2E-06	(1)	4.2E-09	1.8E-08
Benzo(k)fluoranthene	1.8E-06	(1)	6.4E-09	2.6E-08
Beryllium	1.2E-05	(2)	4.2E-08	1.8E-07
Cadmium	1.1E-03	(2)	3.9E-06	1.6E-05
Chromium (total)	1.4E-03	(2)	4.9E-06	2.1E-05
Chrysene	1.8E-06	(1)	6.4E-09	2.6E-08
Cobalt	8.4E-05	(2)	3.0E-07	1.2E-06
Dibenzo(a,h)anthracene	1.2E-06	(1)	4.2E-09	1.8E-08
Fluoranthene	3.0E-06	(1)	1.1E-08	4.4E-08
Fluorene	2.8E-06	(1)	9.9E-09	4.1E-08
Formaldehyde	7.5E-02	(1)	2.6E-04	0.001
Hexane	1.8E+00	(1)	6.4E-03	2.6E-02
Indeno(1,2,3,c,d)pyrene	1.8E-06	(1)	6.4E-09	2.6E-08
Manganese	3.8E-04	(2)	1.3E-06	5.6E-06
Mercury	2.6E-04	(2)	9.2E-07	3.8E-06
Naphthalene	6.1E-04	(1)	2.2E-06	9.0E-06
Nickel	2.1E-03	(2)	7.4E-06	3.1E-05
Phenanthrene	1.7E-05	(1)	6.0E-08	2.5E-07
Pyrene	5.0E-06	(1)	1.8E-08	7.3E-08
Selenium	2.4E-05	(2)	8.5E-08	3.5E-07

Table 11b
Primeline Ovens (PL - E13) Natural Gas Combustion HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [a]	tons/yr [b]
Toluene	3.4E-03	(1)	1.2E-05	5.0E-05
2-Methylnaphthalene	2.4E-05	(1)	8.5E-08	3.5E-07
3-Methylchloranthrene	1.8E-06	(1)	6.4E-09	2.6E-08
Dichlorobenzene	1.2E-03	(1)	4.2E-06	1.8E-05
7,12-Dimethylbenz(a)anthracene	1.6E-05	(1)	5.6E-08	2.3E-07
	Total HAPs		0.01	0.03

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly ovens combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly oven combustion [MMBtu/hr] = 3.8 (3)
Natural gas heating value [MMBtu/MMscf] = 1,077 (4)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual ovens combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual ovens combustion [MMBtu/yr] = 31,624 (3)
Natural gas heating value [MMBtu/MMscf] = 1,077 (4)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-3, Emission Factors for Speciated Organic Compounds from Natural Gas Combustion (July 1998).

(2) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-4, Emission Factors for Metals from Natural Gas Combustion (July 1998).

(3) See Table 1, Production and Process Rates (sum of Oven #1 and Oven #3; Oven #2 is steam-heated).

(4) Provided by Dominon Hope Natural Gas.

JELD-WEN WINDOWS & DOORS

Table 12
Primeline Paint Booth (PL - E14) VOC, HAP, and Particulate Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Material [1]	Pollutant	Maximum Emissions			
		lbs/hr		tons/yr	
Interior Primers JELD-WEN	Total VOC	21.31	(a)	80.18	(b)
	Total HAPs	0.18	(a)	0.67	(b)
	Styrene	0.03	(a)	0.09	(b)
	Methyl Methacrylate	0.01	(a)	0.02	(b)
	Formaldehyde	0.01	(a)	0.04	(b)
	Glycol Ether	0.13	(a)	0.49	(b)
	PM/PM10/PM2.5 (1)	0.59	(c)	2.22	(d)

Maximum hourly primer usage [gals/hr] =	71.0	(2)
Maximum annual primer usage [gals/yr] =	534,560	(2)
Percent interior primer usage [%] =	100.0%	(3)
Interior primer VOC content [lbs/gal] =	3.0E-01	(4)
Interior primer HAP content [lbs/gal] =	2.5E-03	(4)
Styrene content [lbs/gal] =	3.6E-04	(4)
Methyl Methacrylate content [lbs/gal] =	7.1E-05	(4)
Formaldehyde content [lbs/gal] =	1.4E-04	(4)
Glycol Ether content [lbs/gal] =	1.8E-03	(4)
Interior primer density [lbs/gal] =	13.86	(4)
Interior primer solids content [wt %] =	69.0%	(4)

Calculations:

(a) Maximum hourly VOC/HAP emissions (lbs/hr) = (maximum hourly primer usage [gals/hr]) x (percent primer usage [%]) x (VOC/HAP content [lbs/gal])

(b) Maximum annual VOC emissions (tons/yr) = (maximum annual primer usage [gals/yr]) x (percent primer usage [%]) x (VOC content [lbs/gal]) / (2000 lbs/ton)

(c) Maximum hourly PM emissions (lbs/hr) = (maximum hourly primer usage [gals/hr]) x (percent primer usage [%]) x (PM Emission Factor [lbs/gal])

(d) Maximum annual PM emissions (tons/yr) = (maximum annual primer usage [gals/yr]) x (percent primer usage [%]) x (PM Emission Factor [lbs/gal])/2000

Notes:

(1) PM Calculations assume that 100% of PM is PM2.5.
The emission factor is equal to the average of the test values plus two standard deviations.
PM Emission Factor [lbs/gal] = 0.0083

(2) See Table 1, Production and Process Rates.

(3) Provided by JELD-WEN Wood Fiber Division - West Virginia.

(4) From vendor MSDS sheet, product information sheet, or telephone conversation with the vendor.

JELD-WEN WINDOWS & DOORS

Table 13
Material Handling Conveyors Particulate Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Maximum Hourly Throughput [1] (tons/hr)	Pollutant	Maximum Emissions	
			lbs/hr [a]	tons/yr [b]
Truck Dump to Rotary Classifier (CV1) - Furnish	18.4	PM	0.43	0.67
		PM10	0.20	0.32
		PM2.5	0.03	0.05
Rotary Classifier to Metal Detector (CV2) - Furnish	18.4	PM	0.43	0.67
		PM10	0.20	0.32
		PM2.5	0.03	0.05
Metal Detector to Furnish Silo (CV3) - Furnish	18.4	PM	0.43	0.67
		PM10	0.20	0.32
		PM2.5	0.03	0.05
Furnish Storage Silo to Refiner (CV4) - Furnish	12.0	PM	0.28	1.09
		PM10	0.13	0.52
		PM2.5	0.02	0.08
Fuel Storage Silo to Boiler (CV5) - Hogged Fuel	3.9	PM	1.96	7.73
		PM10	0.93	3.66
		PM2.5	0.14	0.55
		Total TSP	3.51	10.83
		Total PM10	1.66	5.12
		Total PM2.5	0.25	0.78

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly throughput [tons/hr]) x (emission factor [lbs/ton])

Furnish PM emission factor (lbs/ton) =	0.02	(c)
Hogged Fuel PM emission factor (lbs/ton) =	0.50	(c)
Furnish PM10 emission factor (lbs/ton) =	0.01	(c)
Hogged Fuel PM10 emission factor (lbs/ton) =	0.24	(c)
Furnish PM2.5 emission factor (lbs/ton) =	0.00	(c)
Hogged Fuel PM2.5 emission factor (lbs/ton) =	0.04	(c)

(b) Maximum annual emissions (tons/yr) = (maximum hourly emissions [tons/yr]) x (truck dump hours of operation [hrs/yr[) / (2000 lbs/ton)

Truck dump hours of operation [hrs/yr] =	3,143	(2)
Boiler & Silo conveyor hours of operation [hrs/yr] =	7,884	(2)

(c) Emission factor (lbs/ton) = (particle size multiplier) x (0.0032) x (((wind speed [mph] / 5)^1.3) / ((moisture content [wt%] / 2)^1.4))

PM Particle size multiplier =	0.74	(3)
PM10 Particle size multiplier =	0.35	(3)
PM2.5 Particle size multiplier =	0.053	(3)
Wind speed (mph) =	5.8	(4)
Furnish moisture content [%] =	45%	(5)
Hogged fuel moisture content [%] =	5%	(5)

Notes:

(1) Hourly capacities based on maximum hourly furnish truck dump throughput (BD-lbs/hr) = (number of trucks per hour [trucks/hr]) x (weight of truck load [wet-lbs/hr]) x (1 - moisture content [%])

Number of trucks per hour [trucks/hr] =	1.33	(5)
Weight per truck load [wet-lbs/truck] =	50,195	(5)
Moisture content [%] =	45%	(5)

Maximum hourly fuel truck dump throughput (BD-lbs/hr) = (maximum wood fuel purchased [lbs/hr]) x (1 - moisture content [%])

Maximum wood fuel purchased [lbs/hr] =	4,700	(6)
Moisture content [%] =	45%	(5)

(2) See Table 1, Production and Process Rates.

(3) Emission factor equation and constants were taken from AP-42, Chapter 13.2.4, Aggregate Handling and Storage Piles (11/2006).

(4) A 57 year annual average wind speed for Charleston, WV take from the Comparative Climatic Data for the United States through 2004 from the National Climatic Data Center Website.

(5) Provided by JELD-WEN Wood Fiber Division - West Virginia.

(6) An estimate of fuel required, in addition to fuel from production operations, in order to operate the boiler at rated capacity.

JELD-WEN WINDOWS & DOORS

Table 14
Paint Manufacturing (DC2 - E15) VOC/HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Raw Material		Pollutant	VOC/HAP Content [1]		Maximum Annual Usage [2] (gals/yr)	Maximum Emissions	
Material	Density [1] (lbs/gal)					lbs/hr [a]	tons/yr [c]
Dispersing Agent	8.97	Total VOC	70	wt %	7,718	0.044	0.080
Fungicide	8.85	Total VOC	6.56	lbs/gal	2,055	0.012	0.022
		Glycol Ether	40	wt %		0.007	0.012
Preservative	9.26	Total VOC	0.15	lbs/gal	2,400	0.000	0.001
		Formaldehyde	1.5	wt %		0.0003	0.001
Polymer	8.6	Total VOC	0.014	lbs/gal	296,400	0.004	0.007
		Glycol Ether	0.090	wt %		0.002	0.004
		Styrene	0.050	wt %		0.001	0.002
Additive	8.93	Total VOC	0.010	lbs/gal	197,400	0.002	0.003
Glycol Ether	8.62	Total VOC	7.910	lbs/gal	39,717	0.288	0.518
		Glycol Ether	99.000	wt%		0.311	0.559
Alkyl	7.43	Total VOC	7.430	lbs/gal	3,544	0.024	0.043
Pigment	15.65	Total VOC	0.080	lbs/gal	1,723	0.000	0.000
Solution	7.73	Total VOC	3.680	lbs/gal	37,616	0.127	0.228
Defoamer	7.34	Total VOC	0.22	lbs/gal	11,400	0.002	0.004
					Total VOC	0.50	0.91
					Total HAP	0.32	0.58

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum annual emissions [tons/yr]) x (2000 lbs/ton) / (paint manufacturing hours of operation [hrs/yr])

Paint manufacturing hours of operation [hrs/yr] = 3,600 (b)

(b) Paint manufacturing hours of operation (hrs/yr) = (maximum annual batch rate [batch/yr]) x (hourly batch rate [hrs/batch])

Maximum annual batch rate [batch/yr] = 600 (2)

Hourly batch rate [hrs/batch] = 6 (2)

(c) Maximum annual emissions (tons/yr) = (maximum annual product usage [gals/yr]) x (density [lbs/gal]) x (VOC/HAP content [wt %]) x (percent VOC/HAP

Maximum annual emissions (tons/yr) = (maximum annual product usage [gals/yr]) x (VOC/HAP content [lbs/gal]) x (percent VOC/HAP loss [%]) / (2000 lb

Percent VOC/HAP loss [%] = 0.33% (3)

Notes:

(1) From vendor MSDS sheet, product information sheet, or telephone conversation with the vendor.

(2) Provided by JELD-WEN Wood Fiber Division - West Virginia.

(3) JELD-WEN laboratory testing under actual process conditions, excluding water.

JELD-WEN WINDOWS & DOORS

Table 15
Paint Manufacturing (DC2, BH5 - E15) Particulate Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Maximum Annual Usage [1] (tons/yr)	Annual Throughput (Before Baghouse) [a] (tons/yr)	Maximum Emissions [2]	
			lbs/hr [b]	tons/yr [c]
Titanium Dioxide	600	0.94	5.2E-04	9.4E-04
Calcium Carbonate Slurry	5,504	8.64	4.8E-03	8.6E-03
Talc	1800	2.83	1.6E-03	2.8E-03
Pigment	7.50	0.01	6.5E-06	1.2E-05
Additives	1,800	2.83	1.6E-03	2.8E-03
Various KLN Clays	400.0	0.63	3.5E-04	6.3E-04
		Total TSP	0.01	0.02

Calculations:

(a) Maximum annual throughput before baghouse (tons/yr) = (maximum annual usage [tons/yr]) x (dust generation factor [lbs/ton]) / (2000 lbs/ton)
Dust generation factor [lbs/ton] = 3.14 (3)

(b) Maximum hourly emissions (lbs/hr) = (maximum annual emissions [tons/yr]) x (2000 lbs/ton) / (paint manufacturing hours of operation [hrs/yr])
Paint manufacturing hours of operation [hrs/yr] = 3,600 (4)

(c) Maximum annual emissions (tons/yr) = (maximum annual throughput before baghouse [ton/yr]) x (1 - baghouse control efficiency [%])
Baghouse control efficiency (%) = 99.9% (1)

Notes:

(1) Provided by JELD-WEN Wood Fiber Division - West Virginia.
(2) Calculations assume that 100% of TSP is $PM_{10}/PM_{2.5}$.
(3) From AP-42, Chapter 11.12, Table 11.12-2, Total Particulate Matter Emission Factor for Uncontrolled Cement Unloading to an Elevated Storage Silo (10/2001).
(4) See Table 20, Paint Manufacturing VOC/HAP Emissions.

JELD-WEN WINDOWS & DOORS

Table 16
Die Coating (DC-E17) Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Raw Material [1]			Hourly PTE Usage (gal)[2]	Annual PTE Usage (gal)[3]	Raw Material Components [1]			Estimated PTE [3]					
Product	Density (lbs/gal)	Solids Content (wt %)			Name	Amount in Product	Units	VOC [a] (lbs/hr)	VOC [b] (tons/yr)	HAP [a] (lbs/hr)	HAP [b] (tons/yr)	TSP/PM10 [c,4] (lbs/hr)	TSP/PM10 [c,4] (tons/yr)
Cleaner Degreaser (wipe-on cleaner)	8.85		0.50	500	Total VOC	3.98	wt%	0.18	0.1				
					Diethylene glycol monbutyl ether	3	wt%			0.13	0.07		
Isopropyl Alcohol (wipe-on cleaner)	6.59		0.22	216	Total VOC	100	wt%	1.42	0.7				
Die Coating	10.85	63.5	0.14	145	Total VOC	46	wt%	0.72	0.4			0.01	0.01
					Methanol	8	wt%			0.13	0.06		
					Silane	28	wt%						
					Isopropyl Alcohol	5	wt%						
					Ethyl Alcohol	5	wt%						
					Totals			2.32	1.2	0.26	0.1	1.5E-02	7.5E-03

Calculations:

(a) Hourly PTE emissions [lbs/hr] = (hourly PTE usage [gals/hr]) x (density [lbs/gal]) x (VOC/HAP content [wt%])

(b) Annual PTE VOC/HAP emissions [tons/yr] = (annual PTE usage [gals/yr]) x (density [lbs/gal]) x (VOC/HAP content [wt%]) / (2000 [lbs/ton])

(c) Annual PTE TSP emissions [tons/yr] = (annual PTE usage [gal/yr]) x (density [lbs/gal]) x (1 - spray transfer efficiency [%]) / 100) x (solids content [wt %] / 100) x (1 - spray booth filter efficiency [%]) / 100)) / 2000 [lbs/ton]

Spray Transfer Efficiency [%] = 70 (5)

Filter Efficiency [%] = 95 (5)

Notes:

(1) Based on maximum from manufacturer's product MSDS.

(2) Hourly product usage conservatively estimated based on several months of product trials at JELD-WEN Wood Fiber of Oregon.

(3) Annual product usage conservatively estimated based on the volume required to clean and coat dies for each press opening once every seven days of production. JELD-WEN Engineering estimates dies will be coated a maximum of once every 14 days of production based on several months of product trials at JELD-WEN Wood Fiber Division - Oregon.

(4) 100% of PM is assumed to be PM_{10} and $PM_{2.5}$.

(5) Conservative engineering estimate.

JELD-WEN WINDOWS & DOORS

Table 17
Maximum Annual Emissions Summary
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Point	Emission Point ID #	Maximum Annual Emissions (tons/yr)										
		TSP	PM10	PM 2.5	SO_2	CO	NOx	VOC	Lead	N_2O	CH_4	CO_2
Wood Boiler (B1)	E5	4.28	4.28	4.28	6.50	84.3	138.3	4.51	0.01	2.41	18.35	53,779
Natural Gas Boiler (B2)	E6	1.11	0.83	0.28	0.09	0.10	24.8	0.80	0.00	0.04	0.42	22,275
Truck Dump (TD)	E1	4.90	1.23	1.23	--	--	--	--	--	--	--	--
East Furnish Silo (FSE)	E2a,b,c,d,e	2.02	0.50	0.50	--	--	--	--	--	--	--	--
West Furnish Silo (FSW)	E3a,b,c,d,e	2.02	0.50	0.50	--	--	--	--	--	--	--	--
Former Baghouse (BH2)	E10	1.75	1.75	1.75	--	--	--	0.31	--	--	--	--
Waste Baghouse (BH3)	E4	0.69	0.69	0.69	--	--	--	0.82	--	--	--	--
Sizer Baghouse (BH4)	E12	4.22	4.22	4.22	--	--	--	0.16	--	--	--	--
Primeline - Ovens (PL)	E13	0.11	0.08	0.03	0.01	1.23	1.47	0.08	0.00	0.004	0.04	2,245
Primeline Paint Booth (PL)	E14	2.22	2.22	2.22	--	--	--	80.2	--	--	--	--
Facility-Wide VOCs (FWVOC)	FWVOC	--	--	--	--	--	--	--	--	--	--	--
Conveyors (CV1 - CV5)	Fugitive	10.83	5.12	0.78	--	--	--	--	--	--	--	--
Paint Manufacturing (DC2)	E15	0.02	0.02	0.02	--	--	--	0.91	--	--	--	--
Rotary Valve (RV)	E16	4.66	1.16	1.16	--	--	--	1.60	--	--	--	--
Die Coating Paint Booth (DC)	E17	0.01	0.01	0.01	--	--	--	1.16	--	--	--	--
Biofilter (BF)	E18	0.34	0.34	0.34	0.05	7.00	8.18	64.45	0.00	0.02	0.22	11,817
Pollutant Total		39.2	23.0	18.0	6.6	92.6	172.8	155.0	0.0126	2.5	19.0	90,117

Table 18
Maximum HAP Emissions Summary
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Point	Maximum Emissions	
	Hourly (lbs/hr)	Annual (tons/yr)
Total Formaldehyde (excluding NG combustion)	0.83	2.63
Total Methanol	0.35	1.45
Total HAPs from Hogged-Fuel Boiler (B1)	2.42	10.05
Total HAPs from Natural Gas Boiler (B2)	0.07	0.27
Total HAPs from Biofilter	0.55	2.28
Total HAPs from Rotary Valve (RV)	0.54	1.07
Total HAPs from Baghouses (B2, B3, B4)	0.63	1.83
Total HAPs from Primeline (PL)	0.67	0.70
Total HAPs from Paint Manufacturing (DC2)	0.32	0.58
Total HAPs from Die Coating (DC)	0.26	0.13
Total HAP	**5.5**	**16.90**

JELD-WEN WINDOWS & DOORS

Table 19
Maximum HAP Emissions Detailed Summary
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Wood-Fired Boiler (tons/yr)	Natural Gas- Fired Boiler (tons/yr)	Rotary Valve (tons/yr)	Biofilter Outlet (tons/yr)	Baghouses (tons/yr)	Paint Manufacturing (tons/yr)	Prime Line (tons/yr)	Die Coating (tons/yr)	Potential Emissions (tons/yr)
Acenaphthene	2.4E-04	2.6E-07		1.4E-07			2.6E-08		**2.4E-04**
Acenaphthylene	1.3E-03	2.6E-07		1.4E-07			2.6E-08		**1.3E-03**
Acetaldehyde	2.2E-01		7.9E-03	0.1					**3.6E-01**
Acetophenone	8.3E-07								**8.3E-07**
Acrolein	1.0E+00		2.6E-01	0.1					**1.4E+00**
Anthracene	7.8E-04	3.5E-07		1.9E-07			3.5E-08		**7.8E-04**
Antimony	2.1E-03								**2.1E-03**
Arsenic	5.7E-03	2.9E-05		1.5E-05			2.9E-06		**5.8E-03**
Benzene	1.1	3.1E-04		6.3E-02			3.1E-05		**1.2E+00**
Benzo(a)anthracene	1.7E-05	2.6E-07		1.4E-07			2.6E-08		**1.7E-05**
Benzo(a)pyrene	6.8E-04	1.7E-07		9.3E-08			1.8E-08		**6.8E-04**
Benzo(b)fluoranthene	2.6E-05	2.6E-07		1.4E-07			2.6E-08		**2.6E-05**
Benzo(g,h,i)perylene	2.4E-05	1.7E-07		9.3E-08			1.8E-08		**2.4E-05**
Benzo(k)fluoranthene	9.4E-06	2.6E-07		1.4E-07			2.6E-08		**9.8E-06**
Beryllium	2.9E-04	1.7E-06		9.3E-07			1.8E-07		**2.9E-04**
bis(2-Ethylhexyl)phthalate	1.2E-05								**1.2E-05**
Bromomethane (Methyl Bromide)	3.9E-03								**3.9E-03**
Cadmium	1.1E-03	1.6E-04		8.5E-05			1.6E-05		**1.3E-03**
Carbon tetrachloride	1.2E-02								**1.2E-02**
Chlorine	2.1E-01								**2.1E-01**
Chlorobenzene	8.6E-03								**8.6E-03**
Chloroform	7.3E-03								**7.3E-03**
Chloromethane (Methyl Chloride)	6.0E-03								**6.0E-03**
Chromium (Total)	5.5E-03	2.0E-04		1.1E-04			2.1E-05		**5.8E-03**
Chrysene	9.9E-06	2.6E-07		1.4E-07			2.6E-08		**1.0E-05**
Cobalt	1.7E-03	1.2E-05		6.5E-06			1.2E-06		**1.7E-03**
Dibenzo(a,h)anthracene	2.4E-06	1.7E-07		9.3E-08			1.8E-08		**2.7E-06**
Dichlorobenzene		1.7E-04		9.3E-05			1.8E-05		**2.9E-04**
1,2-Dichloroethane (Ethylene dichloride)	7.5E-03								**7.5E-03**
Dichloromethane (Methylene Chloride)	7.5E-02								**7.5E-02**
1,2-Dichloropropane (Propylene dichloride)	8.6E-03								**8.6E-03**
7,12-Dimethylbenz(a)anthracene		2.3E-06		1.2E-06			2.3E-07		**3.8E-06**
2,4-Dinitrophenol	4.7E-05								**4.7E-05**
Ethylbenzene	8.1E-03								**8.1E-03**
Fluoranthene	4.2E-04	4.4E-07		2.3E-07			4.4E-08		**4.2E-04**
Fluorene	8.8E-04	4.1E-07		2.2E-07			4.1E-08		**8.8E-04**
Formaldehyde	1.14	0.011	0.02	0.2	1.3	0.001	3.7E-02		**2.7E+00**
Glycol ethers						5.8E-01	4.9E-01	6.6E-02	**1.1E+00**
Hexane		2.6E-01		1.4E-01			2.6E-02		**4.3E-01**
Hydrogen chloride	4.9								**4.9E+00**
Indeno(1,2,3,c,d)pyrene	2.3E-05	2.6E-07		1.4E-07			2.6E-08		**2.3E-05**
Lead	1.2E-02	7.3E-05		3.9E-05			7.3E-06		**1.3E-02**
Manganese	0.42	0.00		0.00			5.58E-06		**0.42**
Mercury	0.00	0.00		0.00			3.82E-06		**0.00**
Methanol			0.77	0.91	0.54			0.06	**2.28**
Methyl Methacrylate							1.90E-02		**0.02**
Methylene Diphenyl Diisocyanate (MDI)				0.00					**0.00**
2-Methylnaphthalene		0.00		0.00			3.52E-07		**0.00**
3-Methylchloranthrene		0.00		0.00			2.64E-08		**0.00**
Naphthalene	0.03	0.00		0.00			8.96E-06		**0.03**
Nickel	0.01	0.00		0.00			3.08E-05		**0.01**
4-Nitrophenol	0.00								**0.00**
Pentachlorophenol (PCP)	0.00								**0.00**
Phenanthrene	0.00	0.00		0.00			2.50E-07		**0.00**
Phenol	0.01		0.01	0.68					**0.70**
Polychlorinated Biphenyls	0.00								**0.00**
Polychlorinated dibenzo-p-dioxins	0.00								**0.00**
Polychlorinated dibenzo-p-furans	0.00								**0.00**
Propionaldehyde	0.02		0.01	0.11					**0.14**
Pyrene	0.00	0.00		0.00			7.34E-08		**0.00**
Selenium	0.00	0.00		0.00			3.52E-07		**0.00**
Styrene	0.49					0.002	9.49E-02		**0.59**
Tetrachloroethene	0.01								**0.01**
Toluene	0.24	0.00		0.00			4.99E-05		**0.24**
Trichloroethene	0.01								**0.01**
1,1,1-trichloroethylene (Methyl Chloroform)	0.01								**0.01**
Vinyl chloride	0.00								**0.00**
Xylene	0.01								**0.01**
Totals	**10.05**	**0.28**	**1.07**	**2.28**	**1.83**	**0.58**	**0.67**	**0.13**	**16.87**

JELD-WEN WINDOWS & DOORS

Table 20
TSP/PM_{10} Process Weight Determination
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Point ID	Material Throughput (lb/hr)		Short Term TSP/PM_{10} (lb/hr)		Maximum Allowable Total Stack Emissions [a] (lb/hr)	Meets Emissions Limit (Yes/No)
E4	366.00	(1)	0.37	(1)	0.44	Yes
E7	110.91	(1)	0.06	(1)	0.13	Yes
E8	110.91	(1)	0.06	(1)	0.13	Yes
E9	110.91	(1)	0.06	(1)	0.13	Yes
E10	906.69	(1)	0.91	(1)	1.09	Yes
E12	12,221.58	(1)	6.11	(1)	7.33	Yes
E13	984.56	(3)	0.03	(4)	1.18	Yes
E14a, E14b	984.56	(2)	0.59	(5)	1.18	Yes

Notes:
(a) Maximum allowable total stack emissions (lb/hr) = [Material throughput (lb/hr)] x [linear regression (lbs/lb of throughput)] (6)

References:
(1) Information taken from Table 11, "Baghouse Particulate Emissions".
(2) Information taken from Table 17, "Primeline Paint Booth Particulate Emissions"
(3) Assumes all material placed through paint booth goes to the paint drying ovens.
(4) Information taken from Table 15, "Primeline Ovens".
(5) Information taken from Table 17, "Primeline Paint Booth"
(6) Linear regression taken from Table 26 for material throughput between two stated numbers.

JELD-WEN WINDOWS & DOORS

Table 21

TSP/PM_{10} Process Weight Table

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Operating Source Operation Process Weight Rate [1] (lbs/hr)	Maximum Allowable Total Stack Emissions Type 'a' [1] (lb/hr)	Linear Regression Calculation (lbs/lb of throughput) [a]
0	0.0	---
2,500	3.0	1.20E-03
5,000	5.0	8.00E-04
10,000	10.0	1.00E-03
20,000	16.0	6.00E-04
30,000	22.0	6.00E-04
40,000	28.0	6.00E-04
50,000	31.0	3.00E-04
100,000	33.0	4.00E-05
200,000	37.0	4.00E-05
300,000	40.0	3.00E-05
400,000	43.0	3.00E-05
500,000	47.0	4.00E-05
600,000	50.0	3.00E-05
700,000	50.0	0.00
800,000	50.0	0.00
900,000	50.0	0.00
1,800,000	50.0	0.00

Notes:

(a) Linear regression: ((Actual process throughput [lb/hr]) - (smaller process weight [lb/hr])) / ((larger process weight [lb/hr]) - (smaller process weight [lb/hr]) = ((Actual emissions [lb/hr]) - (smaller allowable emissions [lb/hr])) / ((larger allowable emissions [lb/hr]) - (smaller allowable emissions [lb/hr])

References:

(1) Information from West Virginia Department of Environmental Quality 45CSR7-4.1 Table 45-7A.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
B1	Hogged Fuel-Fired Boiler	MC, ESP

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Wood-fired fuel cell boiler used for facility steam production.

Manufacturer:	**Model number:**	**Serial number:**
Wellons	IDIC8.0	
Construction date:	**Installation date:**	**Modification date(s):**
05/01/1997	05/01/1997	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

62.5MMBtu/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
62.5MMBtu/hr	520,125 MMBtu/yr	8322

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? [X] Yes [ ] No	**If yes, is it?** [ ] Indirect Fired [X] Direct Fired
Maximum design heat input and/or maximum horsepower rating: 62.5 MMBtu/hr	**Type and Btu/hr rating of burners:** Fuel Cell-Closed couples gasifier with vertical cylindrical combusting cell;62.5MMBtu/hr

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Wood Fuel 7,805 BD-lbs/hr, 32,475 BDT/yr

Describe each fuel expected to be used during the term of the permit.

Wood Fuel			8,008 Btu/BD-lb

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	20.25	84.27
Nitrogen Oxides (NO_X)	33.24	138.30
Lead (Pb)	0.003	0.01
Particulate Matter ($PM_{2.5}$)	1.03	4.28
Particulate Matter (PM_{10})	1.03	4.28
Total Particulate Matter (TSP)	1.03	4.28
Sulfur Dioxide (SO_2)	1.56	6.50
Volatile Organic Compounds (VOC)	1.08	4.51
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
See Attachment J, Table 3		
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
N_2O (5)	0.58	2.41
CH_4 (5)	4.41	18.35
CO_2 (5)	12,925	53779.20

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) All emission estimates include the effect of applied control devices.

(2) Emission factors were taken from a source test performed at the JELD-WEN, Craigsville,
West Virginia facility in April 2003. Two standard deviations were added to the results as a safety factor.

(3) Calculations assume that 100% of TSP is $PM_{2.5}$.

(4) Emission factors were taken from AP-42, Chapter 1.6, Wood Residue Combustion (9/2003).

(5) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Conditions
4.1.1., [45CSR §2-3.1., 45CSR16, 40CFR§60.43c(c)]
4.1.2., **[45CSR§2-9.1.]**
4.1.3., **[45CSR §2-4.4.]**
4.1.4., **[45CSR §2-9.2., 45CSR16, 40 CFR §60.11(d)]**
4.1.5., **[45CSR16, 40 CFR §§60.43c(b) and (d)]**
4.1.6., [45CSR13 – Permit R13-2192 §4.1.7.]
4.1.8. **[45CSR §10-3.8.]**
4.1.9. [45CSR §2-5.1.]
4.1.10. [45CSR13 – Permit R13-2192 §4.1.21, 45CSR§13-5.10.]
4.1.11., [45CSR34; 40 CFR §63.11201(b) and Table 2, Item 6 of 40CFR63, Subpart JJJJJJ; 45CSR13 – Permit R13-2192 §4.1.17.]
4.1.12. [45CSR34; 40 CFR §63.11201(b) and Table 2, Item 16 of 40CFR63, Subpart JJJJJJ; 45CSR13 – Permit R13-2192 §4.1.18.]
4.1.13. [45CSR13 – Permit R13-2192 §4.1.19.]
4.1.15. [45CSR34; 40 CFR §§63.11223(a) and (b)]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)
See Title V Operating Permit R30-06700095-2019 (MM01) Conditions
4.2 Monitoring Requirements
4.2.1., **[45CSR §2-3.2., 45CSR16, 40 CFR §§60.47c(a) & (b)]**
4.2.3., **[45CSR§30-5.1.c.]**

4.3 Testing Requirements
4.3.1., **[45CSR§30-5.1.c.]**
4.3.2. [45CSR13 – Permit R13-2192 §4.2.1.]

4.4 Recordkeeping Requirements
4.4.1., **[45CSR§30-5.1.c.]**
4.4.2., **[45CSR§2-8.3.c., 45CSR§2A-7.1., 40 CFR §60.48c(g), 45CSR16]**
4.4.3., [45CSR13 – Permit R13-2192 §4.3.10.]
4.4.5. [45CSR34; 40 CFR §§63.11225(c)(1), (c)(2), and (d)]

4.5 Reporting Requirements
4.5.1., **[45CSR §2-9.3.]**
4.5.2., **[40 CFR §60.48c(b), 45CSR16]**
4.5.3., **[40 CFR §60.48c(c), 45CSR16]**
4.5.4., **[40 CFR §60.48c(j), 45CSR16]**
4.5.5. [45CSR34; 40 CFR §§63.11225(b), (b)(1), and (b)(2)]

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
B2	Natural Gas-Fired Boiler	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Natural Gas-Fired Boiler

Manufacturer:	**Model number:**	**Serial number:**
Burnham	25113	3P900506060PF
Construction date: 1997	**Installation date:** 1997	**Modification date(s):** 08/31/2001, boiler retubed

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):
37.7 MMBtu/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
37.7 MMBtu/hr	313,739 MMBtu/yr	8322

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? [X] Yes [ ] No	**If yes, is it?** [ ] Indirect Fired [X] Direct Fired
Maximum design heat input and/or maximum horsepower rating: 37.7 MMBtu/hr	**Type and Btu/hr rating of burners:** 37.7 MMBtu/hr

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas 37.7 MMBtu/hr. and 313,739 MMBtu/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	0.022 gr/100 ft^3	0%	1077

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.02	0.10
Nitrogen Oxides (NO_X)	5.97	24.83
Lead (Pb)	0.00002	0.00007
Particulate Matter ($PM_{2.5}$)	0.07	0.28
Particulate Matter (PM_{10})	0.20	0.83
Total Particulate Matter (TSP)	0.27	1.11
Sulfur Dioxide (SO_2)	0.02	0.09
Volatile Organic Compounds (VOC)	0.19	0.80
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
See Attachment J, Table 5		
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
N_2O (4)	0.01	0.04
CH_4 (4)	0.10	0.42
CO_2 (4)	5353	22,275.37

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Natural Gas Combustion (7/1998).

(2) Emission factor taken from AP-42, Chapter 1.4, Natural Gas Combustion. PM10= Condensable, PM2.5 = Filterable.

(3) Emission factors were taken from an engineering source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville,

West Virginia facility in April 2003.

The emission factors are equal to the average of the test values plus two standard deviations.

(4) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Conditions
4.1.1., [45CSR §2-3.1., 45CSR16, 40CFR§60.43c(c)]
4.1.2., **[45CSR§2-9.1.]**
4.1.4., **[45CSR §2-9.2., 45CSR16, 40 CFR §60.11(d)]**
4.1.7., [45CSR13 – Permit R13-2192 §4.1.8.]
4.1.8. **[45CSR §10-3.8.]**
4.1.14., [45CSR13 – Permit R13-2192 §4.1.20
4.1.15., [45CSR34; 40 CFR §§63.11223(a) and (b)]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Conditions
4.2 Monitoring Requirements
4.2.2., **[45CSR §2-3.2. and 45CSR§30-5.1.c.]**
4.2.3 **[45CSR§30-5.1.c.]**

4.4 Recordkeeping Requirements
4.4.1., **[45CSR§30-5.1.c.]**
4.4.2., **[45CSR§2-8.3.c., 45CSR§2A-7.1., 40 CFR §60.48c(g), 45CSR16]**
4.4.4., [45CSR13 – Permit R13-2192 §4.3.11.]
4.4.5., [45CSR34; 40 CFR §§63.11225(c)(1), (c)(2), and (d)]

4.5 Reporting Requirements
4.5.1., **[45CSR §2-9.3.]**
4.5.4., **[40 CFR §60.48c(j), 45CSR16]**
4.5.5., [45CSR34; 40 CFR §§63.11225(b), (b)(1), and (b)(2)]

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Cyclones (C2, C3)

Particulate emissions from the cyclones are affected by the material throughput and the size distribution of the material. Hourly emissions are estimated based on the maximum hourly throughput for each cyclone. Annual emissions are based on the estimated quantity of residuals generated with a door skin production rate of 179,683,869 sqft/year – 1/8" basis. Because particulate size distribution data is not available, all particulate matter emitted has been conservatively assumed to be $PM_{2.5}$. Emissions from these cyclones are controlled by baghouse (BH3).

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C2	Recycle Cyclone	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

B&R Sheetmetal – 6 ft. diameter with an LC cone length, See enclosed process description.

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal	6 ft. diameter with LC cone length	

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
1370 lbs/hr	2570 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO_X)		
Lead (Pb)		
Particulate Matter ($PM_{2.5}$)		
Particulate Matter (PM_{10})		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.0 Source-Specific Requirements

5.1 Limitations and Standards
5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.1 Monitoring Requirements
5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements
3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C3	Waste Cyclone	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See attached description

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal	6 ft. diameter with LC cone length	

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
2975 lbs/hr	5632 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vented to a baghouse (E4), emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.0 Source-Specific Requirements

5.1 Limitations and Standards
5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.2 Monitoring Requirements
5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements
3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Middle Reject Cyclone (C4)

Particulate emissions from this cyclone are based on 5 percent maximum throughput of the reject screw. The middle reject cyclone is used for the metal detect juncture. When metal is detected in the blow line it kicks the material to the middle reject cyclone. Material from this cyclone is then blown to the fuel silos. The middle reject cyclone runs a maximum of 5 hours/day. Emissions from this cyclone are controlled by baghouse (BH3).

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C4	Middle Reject Cyclone	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See attached description

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal	6 ft. diameter with LC cone length	

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
1370 lbs/hr	2570 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating:	**Type and Btu/hr rating of burners:**

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Chip Cleaning Cyclone (C5)

The Chip Cleaning Cyclone serves a maintenance function. As needed, hogged reject door skins (chips) are diverted from the Skin Sizer Baghouse (BH4) and sent to the Chip Cleaning Cyclone. The chips are then stored in a holding bin and augered into the blender once or twice per day for use as a mechanical cleaning agent. Approximately 80 ft^3 of chips are used every 12 hours for cleaning. The cyclone operates as needed to maintain a full storage bin, probably 10 to 12 hours per day.

The Chip Cleaning Cyclone does not generate any particulate emissions not already accounted for elsewhere in this permit application. The cyclone is controlled by the Skin Sizer Baghouse, and material is simply diverted to the cyclone instead of being sent directly to the baghouse.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C5	Chip Cleaning Cyclone	BH4

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See attached description.

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal	6 ft. diameter with LC cone length	

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
2602 lbs/hr	1465 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Chip Cyclone (C6)

Particulate emissions from this cyclone are affected by material throughput from the furnish silos. Hourly emissions have been based on the maximum hourly throughput. Material is transferred from the furnish silos by chain conveyor to a blow line which brings the material to the cyclone. Materials from the cyclone are sent to the rotary valve. Emissions from this cyclone are controlled by baghouse (BH3).

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C6	Chip Cyclone	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See attached description.

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal		
Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
23,944 lbs/hr	47,504 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C7	Press Vent Baghouse Purge Cyclone	BH6, BH1a, BH1b, BH1c, & BF

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

B&R Sheetmetal cyclone

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal		

Construction date:	**Installation date:**	**Modification date(s):**
2013	2013	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
3.2 lbs/hr	8.5 ODT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C8	Dryer Baghouse Purge Cyclone	BH1a, BH1b,BH1c, Biofilter

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

B&R Sheetmetal cyclone

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal		
Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
302.4 lbs/hr	598.06 ODT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 8 & 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
CV1-CV5	Conveyors	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

CV1 – Truck Dump to Rotary Classifier
CV2 – Rotary Classifier to Metal Detector
CV3 – Metal Detector to Furnish Storage Silos
CV4 – Furnish Storage Silos to Refiner
CV5 – Fuel Storage Silos to the Boiler

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	None

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):
CV1 – 18.4 tons/hr; CV2 – 18.4 tons/hr; CV3 – 18.4 tons/hr; CV4 – 12.0 tons/hr; CV5 – 3.9 tons/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
39,303 BD-lbs/hr (total)	57,704 BDT/yr (total)	7884 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.25	.78
Particulate Matter (PM_{10})	1.66	5.12
Total Particulate Matter (TSP)	3.51	10.83
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 13.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

NA

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

NA

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Fiber Dryer and Dryer Cyclone Description

The fiber dryer is a tube dryer manufactured by Westec America. Heat is provided by both steam coils and the direct firing of natural gas; each source is expected to provide about 50% of the heat input to the dryer. The natural gas burner is rated at 20 MMBtu/hr, but it is anticipated that it will normally be operated at about 50% of capacity. Dryer intake air includes the exhaust from the Press (PV) and the Rotary Valve (RV). The wood fiber exiting the dryer is separated from the air stream by the dryer cyclone and is then stored in the doffing roll bin.

Emissions from the dryer, and press are exhausted through the dryer cyclone. These emissions include VOC and HAP volatilized from the wood, natural gas combustion products, and particulate material from the fiber. Three Fiber Dryer Baghouses (BH1a, BH1b, and BH1c) control particulate emissions from the dryer cyclone. The exhaust from the three baghouses is vented into the Biofilter (BF) to control HAP emissions.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
D1/C1	Fiber Dryer and Dryer Cyclone	BH1a, BH1b, BH1c, BF

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description

Manufacturer:	**Model number:**	**Serial number:**
Dryer: Westec America Cyclone: B&R Sheetmetal	54 inch diameter x 270 feet long 10 ft. diameter x 20 ft. cone length	
Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):
20MMBtu/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
21,591 BD-lbs/hr	47,500 BDT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: 8,322 hrs/yr	**Type and Btu/hr rating of burners:** 20 MMBtu/hr Maxon RG-IV air flow burner

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.
Natural Gas – 20 MMBtu/hr, 166,440 MMBtu/yr.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	0.022 gr/100 ft^3	0%	1077

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----(1)	----(1)
Nitrogen Oxides (NO_X)	----(1)	----(1)
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----(1)	----(1)
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
N_2O	----(1)	----(1)
CH_3	----(1)	----(1)
CO_2	----(1)	----(1)

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 7, Cyclone is controlled by the Dryer Baghouses (BH1a, BH1b, BH1c) and be vented to the Biofilter (BF).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.2., **[45CSR13 – Permit R13-2192 §4.1.2.]**
5.1.8., [45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]
5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.16., **[45CSR §7-3.7.]**
5.1.18., **[45CSR §7-4.12.]**

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Die Coating Process (DB)

The die coating process will include five basic steps as follows:

Step 1. Wipe the surface of each die half with a caustic cleaner/degreaser and rags.

Step 2. Media blast the surface of each steel die half in an enclosed booth using re-circulated air with no vent to atmosphere.

Step 3. Wipe the surface of each die half surface clean with isopropyl alcohol and rags.

Step 4. Apply a surface coating to each die half using a HVLP paint gun in the new die coating paint booth vented to atmosphere (E17).

Step 5. Place each die half on a hot plate to cure the surface coating.

The entire process takes a minimum of ½ hour to complete on each die half. The surface coating on each die is allowed to dry completely before installing the die in the door skin press.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
DB	Die Coating	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See Enclosed Process Description

Manufacturer:	**Model number:**	**Serial number:**
TBD	TBD	
Construction date:	**Installation date:**	**Modification date(s):**
TBD	TBD	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
0.1 gal coating/hr	97 gal coating /yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.01	0.01
Particulate Matter (PM_{10})	0.01	0.01
Total Particulate Matter (TSP)	0.01	0.01
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	2.32	1.2
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Methanol	0.13	0.06
Diethylene glycol monbutyl	0.13	0.07
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

(1) See Attachment J, Table 16

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.12 [45CSR13 – Permit R13-2192 §4.1.14.]

5.1.14[45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]

5.1.15 [45CSR §7-3.1.]

5.1.16 [45CSR §7-3.7.]

5.1.18. [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.2. **[45CSR13 – Permit R13-2192 §4.3.8.]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. [45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]

5.4.2 [45CSR13 – Permit R13-2192 §4.3.2.]

5.4.3 [45CSR13 – Permit R13-2192 §4.3.3.]

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of the Coating Manufacturing Process (CM)

The facility manufactures water-based primer used to prime door skins at Wood Fiber Division – West Virginia and other wood products at a number of JELD-WEN, inc. door manufacturing facilities. The primer is made by mixing water-based acrylic latex with a multiple additives and water. The maximum product usage and associated emissions are summarized in Attachment N, Supporting Emission Calculations.

During the pigment addition process, the dispenser is not operated in order to minimize any potential particulate emissions. A dust collector is positioned adjacent to the lid opening to draw any particulate that becomes suspended during the addition of the powder. Once the ingredients are added, the vacuum hose is attached to the opening in the lid to collect any material suspended during the dispersion process. The particulate matter collected by the dust collector is reused in subsequent batches. Emissions from the dust collector are vented inside the building.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
CM	Coating Manufacturing	BH5

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See Enclosed Process Description

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	

Construction date:	**Installation date:**	**Modification date(s):**
1999	04/01/1999	**NA**

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

NA

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
1 batch/6 hours	600 batches /yr	3600 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.01	0.02
Particulate Matter (PM_{10})	0.01	0.02
Total Particulate Matter (TSP)	0.01	0.02
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	0.50	0.91
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Glycol Ether	0.321	0.58
Formaldehyde	0.0003	0.001
Styrene	0.001	0.002
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

(1) See Attachment J, Table 14, Table 15

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.11 [45CSR13 – Permit R13-2192 §4.1.13.; 45CSR§7-4.1]
5.1.14 [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15 [45CSR §7-3.1.
5.1.16 [45CSR §7-3.7.]
5.1.18 [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.1 **[45CSR13 – Permit R13-2192 §4.3.7.]**
5.2.6 45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7 [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. [45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]
5.4.2. [45CSR13 – Permit R13-2192 §4.3.2.]
5.4.3. [45CSR13 – Permit R13-2192 §4.3.3.]
5.4.7. [45CSR§30-5.1.c, 40 CFR §64.9(b)]

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Fiberline Prior to the Press (FL(a))

Particulate, VOC, and HAP emissions generated by the operation are included in the affected source FL(a). Particulate material generated by the shave-off and trimming operation is captured by hoods and conveyed to the Middle Reject Cyclone (C4), which is used to recycle material back into the process. Although the particulate material originates from FL(a), all particulate emissions are accounted for on the affected source sheet for C4. Particulate emissions from C4 are controlled by the Waste Baghouse (BH3).

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FLa	Fiber Line Prior to Press (Former)	BH2 & BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
BH2: 907 lbs/hr BH3: 366 lbs/hr	BH2: 1,753 ODT/yr BH3: 692 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.91	1.75
Particulate Matter (PM_{10})	0.91	1.75
Total Particulate Matter (TSP)	0.91	1.75
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	0.21	.85
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Formaldehyde	0.08	0.31
Methanol	0.13	0.54
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Tables 9 & 10.

(2) Emissions from FLa eventually vent to atmosphere through the Former Baghouse (BH2) and the Waste Baghouse (BH3). Emissions listed here are for the former Baghouse only. The Waste Baghouse emissions are accounted for by other emission units.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.16., **[45CSR §7-3.7.]**
5.1.18 [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. [45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.2]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Fiberline After Press (FL(b))

After the door skins exit the press, reject skins are chipped in an electric hog. The hogged material is pneumatically conveyed to the Sizer Baghouse (BH4). The rest of the skins continue to the unsized skin storage area prior to being cut to the final dimensions by the skin sizer saws. Particulate material generated by the sizing operation are captured by hoods and conveyed to BH4. The trim from the sizing operation is hogged and pneumatically conveyed to BH4.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FLb	Fiber Dryer After the Press (Sizer)	BH4

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

12,222 lbs/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
BH4: 12,222 lbs/hr	BH4: 8,444 ODT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	6.11	4.22
Particulate Matter (PM_{10})	6.11	4.22
Total Particulate Matter (TSP)	6.11	4.22
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	0.23	0.16
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Formaldehyde	0.23	0.16
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Tables 9 & 10.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.16., **[45CSR §7-3.7.]**
5.1.18 [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. [45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.2]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FLSN	North Fuel Storage Silo	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The North Fuel Storage Silo emission unit collects and stores wood fuel from the truck dump and door skin manufacturing operation for the wood-fired boiler.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

28,740 ft^3

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
7,805 BD-lbs/hr (combined)	32,475 BDT/yr (combined)	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

(1) Emissions are controlled by BH3 (E4)

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.3. [45CSR30-5.1.c., 40CFR§64.6(c)]
5.2.4. [45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]
5.2.7 [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**
5.3.2. [45CSR13 – Permit R13-2192 §4.2.1.]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.7. **[45CSR§30-5.1.c , 40 CFR §64.9(b)]**

5.5 Reporting Requirements

5.5.1. **[45CSR§30-5.1.c , 40 CFR §64.9(a)]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FLSS	South Fuel Storage Silo	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The South Fuel Storage Silo emission unit collects and stores wood fuel from the truck dump and door skin manufacturing operation for the wood-fired boiler.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

28,740 ft^3

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
7,805 BD-lbs/hr (combined)	32,475 BDT/yr (combined)	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) Emissions are controlled by BH (E4) .

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.3. [45CSR30-5.1.c., 40CFR§64.6(c)]
5.2.4. [45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]
5.2.7 [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**
5.3.2. [45CSR13 – Permit R13-2192 §4.2.1.]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.7. **[45CSR§30-5.1.c , 40 CFR §64.9(b)]**

5.5 Reporting Requirements

5.5.1. **[45CSR§30-5.1.c , 40 CFR §64.9(a)]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FSE	East Furnish Storage Silo	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The East Furnish Storage Silo stores furnish from the truck dump until it is used in the door skin manufacturing operation.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

46,563 ft^3

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
18,359 BD-lbs/hr	23,757 BDT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.39	0.5
Particulate Matter (PM_{10})	0.39	0.5
Total Particulate Matter (TSP)	1.56	2.0
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 6.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

5.2 Monitoring Requirements

5.2.7., [45CSR§30-5.1.c., 40CFR§64.7(e)]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.7. **[45CSR§30-5.1.c , 40 CFR §64.9(b)]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FSW	West Furnish Storage Silo	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The West Furnish Storage Silo stores furnish from the truck dump until it is used in the door skin manufacturing operation.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

46,563 ft^3

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
18,359 BD-lbs/hr	23,757 BDT/yr	7884 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.39	0.50
Particulate Matter (PM_{10})	0.39	0.50
Total Particulate Matter (TSP)	1.56	2.0
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 6.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

5.2 Monitoring Requirements

5.2.7., [45CSR§30-5.1.c., 40CFR§64.7(e)]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.7. **[45CSR§30-5.1.c , 40 CFR §64.9(b)]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Primeline Description

The doorskins are primed with a waterborne primer with a VOC content less than or equal to 0.3 lbs/gal. The primeline will consist of three ovens and a paint booth. The first oven, located upstream of the paint booth, will pre-heat the door skins. This oven is heated by gas-fired infrared elements with a total rated capacity of 1.4 MMBtu/hr. The second oven, located just downstream of the paint booth, is a steam-heated high-velocity convection oven, which will drive off the volatile components of the paint. The third oven will complete the curing of the paint. The third oven is heated by gas-fired infrared elements with a total rated capacity of 2.4 MMBtu/hr.

The primer will be applied using automatic spray guns. The primer will be reduced slightly with water to obtain the proper viscosity for spraying. Because the primer is waterborne, organic solvents will not be used either for thinning or for clean-up.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
PL	Primeline	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description

Manufacturer:	**Model number:**	**Serial number:**
George Koch Sons (ovens)	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

1.4 MMBtu/hr (1st oven); 2.4 MMBtu/hr (3rd oven)

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
71 gallons primer/hr	534,560 gallons primer/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: 3.8 MMBtu/hr	**Type and Btu/hr rating of burners:** 1.4 MMBtu/hr (1st oven); 2.4 MMBtu/hr (3rd oven)

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas – 3.8 MMBtu/hr, 31,624 MMBtu/yr.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	0.022 gr/100 ft^3	0%	1,077

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.30	1.23
Nitrogen Oxides (NO_X)	0.35	1.47
Lead (Pb)	Insignificant(2)	Insignificant(2)
Particulate Matter ($PM_{2.5}$)	0.01	0.03
Particulate Matter (PM_{10})	0.02	0.08
Total Particulate Matter (TSP)	0.03	0.11
Sulfur Dioxide (SO_2)	0.002	0.01
Volatile Organic Compounds (VOC)(1)	21.31	80.18
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	----(2)	----(2)
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
N_2O	Insignificant(2)	Insignificant(2)
CH_4	0.01	0.04
CO_2	540	2245

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) VOC emissions are combined total from E13, & E14.
(2) See Attachment J, Tables 11a, 11b, & 12

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.5., **[45CSR13 – Permit R13-2192 §4.1.5]**
5.1.9., [45CSR13 – Permit R13-2192 §4.1.11.; 45CSR§7-4.1]
5.1.10., [45CSR13 – Permit R13-2192 §4.1.12.; 45CSR§7-4.1]
5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.16., **[45CSR §7-3.7.]**
5.1.17**.,** [45CSR §7-4.12.]
5.1.18**.,** [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.5., [45CSR§30-5.1.c., 40CFR§64.7(b)]
5.2.7., [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of the Fiber Line Press (PV)

Fiber mats are conveyed off of the Fiber Line, stacked into a loader, and loaded into a steam heated eight-opening press. The press contains steel dies with the desired door skin patterns in relief. Once all of the platens of the press are full, the press consolidates the resinated fiber under heat and pressure. The door skins are pressed until the resin has cured. The press opens and the door skins are unloaded.

Air emissions from the press are captured in a permanent total enclosure meeting the requirements of EPA Method 204 and exhausted to the Press Vent Baghouse (BH6) to control Particulate emissions. The Baghouse (BH6) exhaust is vented into the Fiber Dryer (D1) intake. The Fiber Dryer (D1) is exhausted to the Dryer Cyclone (C1) and then to three Fiber Dryer Baghouses (BH1a, BH1b, & BH1c) to control Particulate emissions from the Dryer (D1). The exhaust from the three Fiber Dryer Baghouses (BH1a, BH1b, & BH1c) is vented into the Biofilter (BF).

Potential press emissions are calculated using the maximum hourly and annual press throughput (21,591 ft2/hr and 179,683,869 ft2/yr – 1/8" basis) multiplied by the emission factors based on source testing conducted on the uncontrolled emission source and the Biofilter (BF) control efficiency provided by the manufacturer.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
PV	Press Vents	BH6, BH1a, BH1b, BH1c, BF

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Steam heated 5ft x8ft, eight-opening press used to consolidate wood fiber mats.

See attached process description

Manufacturer:	**Model number:**	**Serial number:**
COE Manufacturing	Steam heated eight-opening press	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

23,942 lbs/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
21,591 ft2/hr – 1/8" basis	179,683,869 ft2/hr – 1/8" basis	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----(1)	----(1)
Nitrogen Oxides (NO_X)	----(1)	----(1)
Lead (Pb)	----(1)	----(1)
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----(1)	----(1)
Volatile Organic Compounds (VOC)	----(1)	----(1)
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	----(1)	----(1)
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Tables 7&9 Press is controlled by the Press Vent Baghouse (B6), Dryer Baghouses (BH1a, BH1b, BH1c) and Biofilter (BF).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.3., **[45CSR13 – Permit R13-2192 §4.1.3.]**
5.1.6., [45CSR13 – Permit R13-2192 §4.1.6.; 45CSR§7-4.1]
5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., 45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.5., [45CSR§30-5.1.c., 40CFR§64.7(b)]
5.2.6., [45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7., [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.3 Testing Requirements

5.3.1., **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1., **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2., **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3., **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.5., **[45CSR13 – Permit R13-2192 §4.3.5.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
RS	Rotary Classifier	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The rotary classifier removes large pieces of wood furnish from green wood chips prior to the conveyor to the furnish storage silos

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** None

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):
40 tons/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
19.65 tons/hr (total)	154,931 tons/yr (total)	7884 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	Insignificant	Insignificant
Particulate Matter (PM_{10})	Insignificant	Insignificant
Total Particulate Matter (TSP)	Insignificant	Insignificant
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

Emissions are believed to be insignificant.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

NA

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

NA

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
RV	Rotary Valve	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Rotary valve is associated with the wood chip refining process.

Manufacturer:	**Model number:**	**Serial number:**
Unknown		

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
23,944 OD- lbs/hr	47,504 ODT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.59	1.16
Particulate Matter (PM_{10})	0.59	1.16
Total Particulate Matter (TSP)	2.35	4.66
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	0.81	1.60
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Total HAP	0.54(1)	1.07(1)
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) For individual HAP See Attachment J, Table 8.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.7., [45CSR13 – Permit R13-2192 §4.1.9.; 45CSR§7-4.1]
5.1.15 **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

5.2 Monitoring Requirements

5.2.6., [45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7., 45CSR§30-5.1.c., 40CFR§64.7(e)]

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1., **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.3., **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of the Truck Dump (TD)

The Truck Dump is a receiving bin for wet green poplar chips used in the door skin manufacturing process and wood residuals for combustion in the Hogged Fuel-Fired Boiler (B1) with a total maximum hourly throughput of 36,718 BD lbs/hr. Fugitive particulate emissions from the Truck Dump (TD) are estimated based on a particle size analysis of plytrim from a similar source multiplied by the potential hourly and annual material throughput.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
TD	Truck Dump	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

NA

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
39,303 BD-lbs/hr (combined)	57,704 BDT/yr (combined)	7884 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	1.56	4.5
Particulate Matter (PM_{10})	1.56	4.5
Total Particulate Matter (TSP)	6.24	8.9
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	Insignificant	Insignificant
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	Insignificant	Insignificant
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 6.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.15 **[45CSR §7-3.1.]**

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

NA

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Eric Rapp <ERapp@jeldwen.com> Fri, Feb 2, 2024 at 3:35 PM
To: Sarah K Barron <sarah.k.barron@wv.gov>
Cc: Jay Borrell <Jborrell@jeldwen.com>, Randy Taylor <RTaylor@jeldwen.com>

Hi Sarah,

Per our discussion regarding the throughput/capacities referenced in the initial submission we have revised to remove the additional capacities. These revisions will coincide with the prior submission and alleviate the need to pursue any modifications at this time.

The following forms have been revised and are attached for your reference.

- Permit application Section 3 Facility Wide Emissions: – Reflects revised emissions
- Attachment D - Equipment Table – Capacities revised and reflected accordingly
- Attachment E – Emission Unit Forms: All forms have been revised to reflect the updated capacities and associated emissions (storage tanks remain unchanged)
- Attachment I – Supporting Emission Calculations: Tables revised to reflect adjusted emissions

Should you have any questions feel free to contact us.

Thank you,

ERIC RAPP | DIRECTOR ENVIRONMENTAL COMPLIANCE – GLOBAL ENVIRONMENTAL, HEALTH & SAFETY

JELD-WEN, Inc.

500 JELD-WEN Rd.

Craigsville, WV 26205

Office: 304.742.5180 x16

Cell: 304.644.7222

erapp@jeldwen.com

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4 attachments

Section 3. Facility Wide Emissions.pdf
209K

Attachment D - Equipment Table Revised.pdf
149K

Attachment I - Supporting Emission Calculations.pdf
484K

Att Es (2024-02).pdf
974K

Section 3: Facility-Wide Emissions

23. Facility-Wide Emissions Summary [Tons per Year]	
Criteria Pollutants	Potential Emissions
Carbon Monoxide (CO)	92.6
Nitrogen Oxides (NO_X)	172.8
Lead (Pb)	0.0126
Particulate Matter ($PM_{2.5}$)[1]	18.0
Particulate Matter (PM_{10})[1]	23.0
Total Particulate Matter (TSP)	39.2
Sulfur Dioxide (SO_2)	6.6
Volatile Organic Compounds (VOC)	155.0
Hazardous Air Pollutants[2]	Potential Emissions
Total HAPs	16.90
Regulated Pollutants other than Criteria and HAP	Potential Emissions
N_2O	2.5
CH_4	19.0
CO_2	90,117

[1] $PM_{2.5}$ and PM_{10} are components of TSP.
[2] For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section.

ATTACHMENT D - Title V Equipment Table

(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Unit ID[1]	Emission Point ID[1]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Control Device[1]
TD	E1(fugitive)	Truck Dump	May 1, 1998	36,718 lbs/hr	None
FSE	E2a,b,c,d,e	East Furnish Storage Silo	May 1, 1998	46,563 ft3	None
FSW	E3a,b,c,d,e	West Furnish Storage Silo	May 1, 1998	46,563 ft3	None
FLSN	E4	North Fuel Storage Silo	May 1, 1998	28,740 ft3	BH3 (Baghouse)
FLSS	E4	South Fuel Storage Silo	May 1, 1998	28,740 ft3	BH3 (Baghouse)
FLa	E4	Fiber Line Prior to Press (Former)	May 1, 1998	13,323 lbs/hr	BH2 (Baghouse)
C2	E4	Recycle Cyclone	May 1, 1998	1,370 lbs/hr	BH3 (Baghouse)
C3	E4	Waste Cyclone	May 1, 1998	2975 lbs/hr	BH3 (Baghouse)
C4	E4	Middle Reject Cyclone	May 1, 1998	1370 lbs/hr	BH3 (Baghouse)
C6	E4	Chip Cyclone	May 1, 1998	23,944 lbs/hr	BH3 (Baghouse)
B1	E5	Hogged Fuel-Fired Boiler	May 1, 1998	62.5 MMBtu/hr	MC (multiclone), ESP (Electrostatic Pre
B2	E6	Natural Gas-Fired Boiler	May 1, 1998	37.7 MMBtu/hr	None
D1	E18	Fiber Dryer	May 1, 1998	23,942 lbs/hr	BH1a, BH1b, BH1c, BF
C1	E18	Dryer Cyclone	May 1, 1998	30,250 lbs/hr	BH1a, BH1b, BH1c, BF
C8	E18	Dryer Baghouse Purge Cyclone	May 1, 1998	302.4 lbs/hr	BH1a, BH1b, BH1c, BF
PV	E18	Press Vents	May 1, 1998	23,942 lbs/hr	BH1a, BH1b, BH1c, BF
C7	E18	Press Vent Baghouse Purge Cyclone	2013	3.2 lbs/hr	BH1a, BH1b, BH1c, BF
FLa	E10	Fiber Line Prior to Press (Former)	May 1, 1998	21,591 SF-1/8/hr	BH2, BH3
FLb	E12	Fiber Line After Press (Sizer)	May 1, 1998	12,222 lbs/hr	BH4 (Baghouse)
C5	E12	Chip Cleaning Cyclone	May 1, 1998	2,602 lbs/hr	BH4 (Baghouse)
DC	E12	Die Cleaning Operation	2009	120 lbs/hr Na2CO3	BH4 (Baghouse)
PL	E13	Primeline (Ovens)	May 1, 1998	3.8 MMBtu/hr (total)	None
PL	E14	Primeline (Paint Booth)	May 1, 1998	71.0 gals/hr	None
~~DC2~~ CM	E15	Coating Manufacturing	April 1999	600 batches/yr	BH5 (Baghouse)
RV	E16	Rotary Valve	May 1, 1998	23,944 lbs/hr	None

[1]For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

ATTACHMENT D - Title V Equipment Table

(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Unit ID[1]	Emission Point ID[1]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Control Device[1]
~~DC~~ DB	E17	Die Coating	May 1, 1998	145 gal coating/yr	None
CV1-5	Fugitive	Conveyors	May 1, 1998	106.2 tons/hr	None
RS	Fugitive	Rotary Classifier	May 1, 1998	40 ton/hr	None
ST1	Fugitive	Resin Storage Tank 1	May 1, 1998	7,000 gallons	None
ST2	Fugitive	Resin Storage Tank 2	May 1, 1998	7,000 gallons	None
ST3	Fugitive	Wax Storage Tank	May 1, 1998	10,000 gallons	None
ST4	Fugitive	Coating Storage Tank	May 1, 1999	10,000 gallons	None
ST5	Fugitive	Coating Storage Tank	April 1, 1999	6,000 gallons	None
ST6	Fugitive	Coating Storage Tank	May 1, 1999	10,000 gallons	None
ST7	Fugitive	Coating Storage Tank	May 1, 1999	10,000 gallons	None
ST8	Fugitive	Coating Storage Tank	May 1, 1999	10,000 gallons	None
ST9	Fugitive	Coating Storage Tank	April 1, 1999	6,000 gallons	None

[1]For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

JELD-WEN WINDOWS & DOORS

Table 1
Production and Process Rates
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Source	Maximum Rates				
	Hourly			Annual	
Maximum Production					
Fiber Dryer Throughput	23,942	BD-lbs	(1)	47,500	BDT
Door Skins	21,591	SF-1/8"	(c)	179,683,869	SF-1/8"
Hogged Door Skins	10,796	SF-1/8"	(2)	26,952,580	SF-1/8"
Maximum Combustion Sources					
Wood-Fired Boiler - Combustion	62.5	MMBtu	(3)	520,125	MMBtu
Wood-Fired Boiler - Fuel Usage	7,805	BD-lbs	(f)	32,475	BDT
Natural Gas Boiler	37.7	MMBtu	(3)	313,739	MMBtu
Natural Gas Furnish Dryer	20.0	MMBtu	(3)	166,440	MMBtu
Primeline Oven #1	1.4	MMBtu	(3)	11,651	MMBtu
Primeline Oven #3	2.4	MMBtu	(3)	19,973	MMBtu
Maximum Truck Dump Throughput					
Purchased Furnish	36,718	BD-lbs	(g)	47,514	BDT
Purchased Wood Fuel	2,585	BD-lbs	(i)	10,190	BDT
Maximum Raw Material Throughput					
Primer Usage	71.0	gallons	(k)	534,560	gallons
Maximum Hours of Operation					
Facility Hours		--		8,322	hours
Truck Dump Hours		--		7,884	hours

JELD-WEN WINDOWS & DOORS

Table 2

Wood-Fired Boiler (B1 - E5) Criteria Pollutant Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MMBtu)		Maximum Emissions (1)	
			lbs/hr (a)	tons/yr (b)
TSP	1.64E-02	(2)	1.03	4.28
PM10	1.64E-02	(3)	1.03	4.28
PM 2.5	1.64E-02	(7)	1.03	4.28
SO2	2.50E-02	(4)	1.56	6.50
CO	3.24E-01	(2)	20.25	84.27
NOx	5.32E-01	(2)	33.24	138.30
VOC	1.73E-02	(2)	1.08	4.51
Lead	4.80E-05	(4)	0.003	0.01
N_2O	9.26E-03	(5)	0.58	2.41
CH_4	7.05E-02	(5)	4.41	18.35
CO_2	207	(5)	12,925	53779.20

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly boiler combustion [MMBtu/hr]) x (emission factor [lbs/MMBtu])

Maximum hourly boiler combustion [MMBtu/hr] = 62.5 (6)

(b) Maximum annual emissions (tons/yr) = (maximum annual boiler combustion [MMBtu/yr]) x (emission factor [lbs/MMBtu]) / (2000 lbs/ton)

Maximum annual boiler combustion [MMBtu/yr] = 520,125 (6)

Notes:

(1) All emission estimates include the effect of applied control devices.

(2) Emission factors were taken from a source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia facility in April 2003. Two standard deviations were added to the results as a safety factor.

(3) Calculations assume that 100% of TSP is PM_{10}.

(4) Emission factors were taken from AP-42, Chapter 1.6, Wood Residue Combustion (9/2003).

(5) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

(6) See Table 1, Production and Process Rates.

(7) Calculations assume that 100% of TSP is PM2.5

JELD-WEN WINDOWS & DOORS

Table 3
Wood-Fired Boiler (B1 - E5) HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMBtu)		Maximum Emissions	
			lbs/hr [(a)]	tons/yr [(b)]
1,1,1-Trichloroethane	3.1E-05	(1)	1.9E-03	8.1E-03
1,2-Dichloroethane	2.9E-05	(1)	1.8E-03	7.5E-03
1,2-Dichloropropane	3.3E-05	(1)	2.1E-03	8.6E-03
2,4-Dinitrophenol	1.8E-07	(1)	1.1E-05	4.7E-05
4-Nitrophenol	1.1E-07	(1)	6.9E-06	2.9E-05
Acenaphthene	9.1E-07	(1)	5.7E-05	2.4E-04
Acenaphthylene	5.0E-06	(1)	3.1E-04	1.3E-03
Acetaldehyde	8.3E-04	(1)	5.2E-02	2.2E-01
Acetophenone	3.2E-09	(1)	2.0E-07	8.3E-07
Acrolein	4.0E-03	(1)	2.5E-01	1.0E+00
Anthracene	3.0E-06	(1)	1.9E-04	7.8E-04
Antimony	7.9E-06	(2)	4.9E-04	2.1E-03
Arsenic	2.2E-05	(2)	1.4E-03	5.7E-03
Benz(a)anthracene	6.5E-08	(1)	4.1E-06	1.7E-05
Benzene	4.2E-03	(1)	2.6E-01	1.1
Benzo(a)pyrene	2.6E-06	(1)	1.6E-04	6.8E-04
Benzo(b)fluoranthene	1.0E-07	(1)	6.3E-06	2.6E-05
Benzo(g,h,i)perylene	9.3E-08	(1)	5.8E-06	2.4E-05
Benzo(k)fluoranthene	3.6E-08	(1)	2.3E-06	9.4E-06
Beryllium	1.1E-06	(2)	6.9E-05	2.9E-04
bis(2-Ethylhexyl)phthalate	4.7E-08	(1)	2.9E-06	1.2E-05
Bromomethane	1.5E-05	(1)	9.4E-04	3.9E-03
Cadmium	4.1E-06	(2)	2.6E-04	1.1E-03
Carbon tetrachloride	4.5E-05	(1)	2.8E-03	1.2E-02
Chlorine	7.9E-04	(1)	4.9E-02	2.1E-01
Chlorobenzene	3.3E-05	(1)	2.1E-03	8.6E-03
Chloroform	2.8E-05	(1)	1.8E-03	7.3E-03
Chloromethane	2.3E-05	(1)	1.4E-03	6.0E-03
Chromium (total)	2.1E-05	(2)	1.3E-03	5.5E-03
Chrysene	3.8E-08	(1)	2.4E-06	9.9E-06
Cobalt	6.5E-06	(2)	4.1E-04	1.7E-03
Dibenzo(a,h)anthracene	9.1E-09	(1)	5.7E-07	2.4E-06
Dichloromethane	2.9E-04	(1)	1.8E-02	7.5E-02
Ethylbenzene	3.1E-05	(1)	1.9E-03	8.1E-03
Fluoranthene	1.6E-06	(1)	1.0E-04	4.2E-04
Fluorene	3.4E-06	(1)	2.1E-04	8.8E-04
Formaldehyde	4.4E-03	(1)	2.8E-01	1.1
Hydrogen chloride	1.9E-02	(1)	1.2	4.9
Indeno(1,2,3,c,d)pyrene	8.7E-08	(1)	5.4E-06	2.3E-05
Manganese	1.6E-03	(2)	1.0E-01	4.2E-01
Mercury	3.5E-06	(2)	2.2E-04	9.1E-04
Naphthalene	9.7E-05	(1)	6.1E-03	2.5E-02
Nickel	3.3E-05	(2)	2.1E-03	8.6E-03
Pentachlorophenol	5.1E-08	(1)	3.2E-06	1.3E-05
Phenanthrene	7.0E-06	(1)	4.4E-04	1.8E-03
Phenol	5.1E-05	(1)	3.2E-03	1.3E-02
Polychlorinated biphenyls	8.1E-09	(1)	5.1E-07	2.1E-06
Polychlorinated dioxins	1.7E-06	(1)	1.0E-04	4.3E-04
Polychlorinated furans	1.9E-09	(1)	1.2E-07	4.9E-07
Propionaldehyde	6.1E-05	(1)	3.8E-03	1.6E-02
Pyrene	3.7E-06	(1)	2.3E-04	9.6E-04
Selenium	2.8E-06	(2)	1.8E-04	7.3E-04
Styrene	1.9E-03	(1)	1.2E-01	0.49
Tetrachloroethylene	3.8E-05	(1)	2.4E-03	9.9E-03
Toluene	9.2E-04	(1)	5.8E-02	2.4E-01
Trichloroethylene	3.0E-05	(1)	1.9E-03	7.8E-03
Vinyl chloride	1.8E-05	(1)	1.1E-03	4.7E-03
Xylenes	2.5E-05	(1)	1.6E-03	6.5E-03
	Total HAPs		2.42	10.05

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly boiler combustion [MMBtu/hr]) x (emission factor [lbs/MMBtu])

Maximum hourly boiler combustion [MMBtu/hr] = 62.5 (3)

(b) Maximum annual emissions (tons/yr) = (maximum annual boiler combustion [MMBtu/yr]) x (emission factor [lbs/MMBtu]) / (2000 lbs/ton)

Maximum annual boiler combustion [MMBtu/yr] = 520,125 (3)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.6, Table 1.6-3, Emission Factors for Speciated Organic Compounds from Wood Residue Combustion (September 2003).

(2) Emission factors were taken from AP-42, Chapter 1.6, Table 1.6-4, Emission Factors for Trace Elements from Wood Residue Combustion (September 2003).

(3) See Table 1, Production and Process Rates.

JELD-WEN WINDOWS & DOORS

Table 4

Natural Gas-Fired Boiler (B2 - E6) Criteria Pollutant Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [(a)]	tons/yr [(b)]
TSP	7.6	(1)	0.27	1.11
PM10	5.7	(2)	0.20	0.83
PM 2.5	1.9	(2)	0.07	0.28
SO2	0.6	(1)	0.02	0.09
CO	0.7	(3)	0.02	0.10
NOx	170	(3)	5.97	24.83
VOC	5.5	(1)	0.19	0.80
Lead	5.0E-04	(1)	1.75E-05	0.00007
N_2O	2.68E-04	(4)	0.01	0.04
CH_4	2.68E-03	(4)	0.10	0.42
CO_2	142	(4)	5,353	22,275.37

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly boiler combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly boiler combustion [MMBtu/hr] = 37.7 (5)

Natural gas heating value [MMBtu/MMscf] = 1,077 (6)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual boiler combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual boiler combustion [MMBtu/yr] = 313,739 (5)

Natural gas heating value [MMBtu/MMscf] = 1,077 (6)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Natural Gas Combustion (7/1998).

(2) Emission factor taken from AP-42, Chapter 1.4, Natural Gas Combustion. PM10= Condensable, PM2.5 = Filterable

(3) Emission factors were taken from an engineering source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia facility in April 2003.
The emission factors are equal to the average of the test values plus two standard deviations.

(4) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

(5) See Table 1, Production and Process Rates.

(6) Provided by Dominon Hope Natural Gas.

Table 5
Natural Gas-Fired Boiler (B2 - E6) HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [a]	tons/yr [b]
Acenaphthene	1.8E-06	(1)	6.3E-08	2.6E-07
Acenaphthylene	1.8E-06	(1)	6.3E-08	2.6E-07
Anthracene	2.4E-06	(1)	8.4E-08	3.5E-07
Arsenic	2.0E-04	(2)	7.0E-06	2.9E-05
Benz(a)anthracene	1.8E-06	(1)	6.3E-08	2.6E-07
Benzene	2.1E-03	(1)	7.4E-05	3.1E-04
Benzo(a)pyrene	1.2E-06	(1)	4.2E-08	1.7E-07
Benzo(b)fluoranthene	1.8E-06	(1)	6.3E-08	2.6E-07
Benzo(g,h,i)perylene	1.2E-06	(1)	4.2E-08	1.7E-07
Benzo(k)fluoranthene	1.8E-06	(1)	6.3E-08	2.6E-07
Beryllium	1.2E-05	(2)	4.2E-07	1.7E-06
Cadmium	1.1E-03	(2)	3.9E-05	1.6E-04
Chromium (total)	1.4E-03	(2)	4.9E-05	2.0E-04
Chrysene	1.8E-06	(1)	6.3E-08	2.6E-07
Cobalt	8.4E-05	(2)	2.9E-06	1.2E-05
Dibenzo(a,h)anthracene	1.2E-06	(1)	4.2E-08	1.7E-07
Fluoranthene	3.0E-06	(1)	1.1E-07	4.4E-07
Fluorene	2.8E-06	(1)	9.8E-08	4.1E-07
Formaldehyde	7.5E-02	(1)	2.6E-03	1.1E-02
Hexane	1.8E+00	(1)	6.3E-02	2.6E-01
Indeno(1,2,3,c,d)pyrene	1.8E-06	(1)	6.3E-08	2.6E-07
Manganese	3.8E-04	(2)	1.3E-05	5.5E-05
Mercury	2.6E-04	(2)	9.1E-06	3.8E-05
Naphthalene	6.1E-04	(1)	2.1E-05	8.9E-05
Nickel	2.1E-03	(2)	7.4E-05	3.1E-04
Phenanthrene	1.7E-05	(1)	6.0E-07	2.5E-06
Pyrene	5.0E-06	(1)	1.8E-07	7.3E-07
Selenium	2.4E-05	(2)	8.4E-07	3.5E-06

Table 5
Natural Gas-Fired Boiler (B2 - E6) HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [a]	tons/yr [b]
Toluene	3.4E-03	(1)	1.2E-04	5.0E-04
2-Methylnaphthalene	2.4E-05	(1)	8.4E-07	3.5E-06
3-Methylchloranthrene	1.8E-06	(1)	6.3E-08	2.6E-07
Dichlorobenzene	1.2E-03	(1)	4.2E-05	1.7E-04
7,12-Dimethylbenz(a)anthracene	1.6E-05	(1)	5.6E-07	2.3E-06
	Total HAPs		0.07	0.27

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly boiler combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly boiler combustion [MMBtu/hr] = 37.7 (3)

Natural gas heating value [MMBtu/MMscf] = 1,077 (4)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual boiler combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual boiler combustion [MMBtu/yr] = 313,739 (3)

Natural gas heating value [MMBtu/MMscf] = 1,077 (4)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-3, Emission Factors for Speciated Organic Compounds from Natural Gas Combustion (July 1998).

(2) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-4, Emission Factors for Metals from Natural Gas Combustion (July 1998).

(3) See Table 1, Production and Process Rates.

(4) Provided by Dominon Hope Natural Gas.

Table 6
Truck Dump (TD) Fugitive Particulate Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Pollutant	Fraction of Material (1) (%)	Maximum Emissions	
			lbs/hr (a)	tons/yr (b)
Truck Dump (TD)	TSP	0.0085%	3.12	4.9
	PM10	0.0021%	0.78	1.2
	PM 2.5	0.0021%	0.78	1.2
East Furnish Silo (FSE)	TSP	0.0085%	1.56	2.0
	PM10	0.0021%	0.39	0.5
	PM 2.5	0.0021%	0.39	0.5
West Furnish Silo (FSW)	TSP	0.0085%	1.56	2.0
	PM10	0.0021%	0.39	0.50
	PM 2.5	0.0021%	0.39	0.50
		Total TSP	6.24	8.9
		Total PM10/PM2.5	1.56	4.5

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly truck dump throughput [BD-lb/hr]) x (fraction of material [%])

Maximum hourly truck dump throughput [BD-lb/hr] =	36,718	(2)
Maximum hourly east furnish silo throughput [BD-lb/hr] =	18,359	(3)
Maximum hourly west furnish silo throughput [BD-lb/hr] =	18,359	(3)

(b) Maximum annual emissions (tons/yr) = (maximum annual truck dump throughput [BDT/yr]) x (fraction of material [%])

Maximum annual truck dump throughput [BDT/yr] =	57,704	(2)
Maximum annual east furnish silo throughput [BDT/yr] =	23,757	(3)
Maximum annual west furnish silo throughput [BDT/yr] =	23,757	(3)

Notes:

(1) Based on a particle size analysis of plytrim. Material less than 150 microns in diameter was conservatively assumed to be TSP.
The PM_{10} emissions were assumed to be 25% of the TSP emissions.
The PM2.5 emissions were assumed to be 25% of the TSP emissions.

(2) See Table 1, Production and Process Rates. Sum of the furnish and wood fuel truck dump throughputs.

(3) See Table 1, Production and Process Rates. Assumes each furnish silo receives half of the furnish truck dump throughput.

JELD-WEN WINDOWS & DOORS

Biofilter (BF-E18) Estimated Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor		Maximum Estimated Biofilter Outlet Emissions			
	lbs/hr	tons/yr	lbs/hr [(a)]		tons/yr [(b)]	
TSP	0.17	0.34	0.17	(a)	0.34	(b)
PM10	0.17	0.34	0.17	(a)	0.34	(b)
PM 2.5	0.17	0.34	0.17	(a)	0.34	(b)
VOC	30.65	67.84	29.11	(c)	64.45	(d)
CO	1.68	7.00	1.68	(a)	7.00	(b)
NOx	1.96	8.18	1.96	(a)	8.18	(b)
	(lbs/MSF-1/8")[(3)]					
Acetaldehyde	*0.00156*		0.03	(a)	0.14	(b)
Acrolein	*0.00079*		0.02	(a)	0.07	(b)
Benzene	*0.00070*		0.02	(a)	0.06	(b)
Formaldehyde	*0.00172*		0.04	(a)	0.15	(b)
Methanol	*0.01018*		0.22	(a)	0.91	(b)
Phenol	*0.00756*		0.16	(a)	0.68	(b)
Propionaldehyde	*0.00124*		0.03	(a)	0.11	(b)
MDI	*0.00003*		0.001	(a)	0.00	(b)
HAPs from NG Burner			0.03		0.14	
		Total HAP	0.51		2.1	

Calculations:

(a) Maximum hourly emissions at biofilter oulet (lbs/hr) = (maximum hourly emissions at biofilter inlet [lbs/hr]) x (1 - pollutant control efficiency [%])

(b) Maximum annual emissions at biofilter outlet (tons/yr) = (maximum annual emissions at biofilter inlet [tons/yr]) x (1 - pollutant control efficiency [%])

biofilter VOC control efficiency [%] =	5%	(2)
Methanol & Formaldehyde control efficiency [%] =	90%	(2)
Other HAP control efficiency [%] =	0%	(2)
biofilter TSP/PM10 control efficiency [%] =	0%	(2)

(c) Maximum hourly VOC emissions at biofilter oulet (lbs/hr) = (VOC emissions at inlet [lbs/hr]) * (1 - VOC control efficiency [%])

(d) Maximum hourly VOC emissions at biofilter oulet (tons/yr) = (VOC emissions at inlet [tons/yr]) * (1 - VOC control efficiency [%])

Notes:

(1) See Tables 7a - 7d and Table 9, *Non-detects were assumed at the detection level and are represented in italics*

(2) Provided by MET-PRO, biofilter manufacturer.

For conservacy, JELD-WEN is using 5% VOC control efficiency rather than the estimated 10% control efficiency provide by MET-PRO.

(3) Emissions factors derived from average of 2014, 2016, 2018, & 2019 Performance Tests including 2X standard deviation of each pollutant emission factor

Table 7a

Press Vents Emissions TO BIOFILTER

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MSF-1/8")		Maximum Uncontrolled Emissions **TO BIOFILTER**	
			lbs/hr [(a)]	tons/yr [(b)]
TSP / PM10 / PM2.5	0.042	(1)	9.05E-04	3.76E-03
VOC	0.145	(2)	3.13	13.03
CO	0.006	(3)	0.12	0.51
NOx	0.005	(3)	0.11	0.45

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly door skin production [MSF-1/8"/hr]) x (emission factor [lbs/MSF-1/8"]) x (1-baghouse TSP/PM10 control efficiency)

Maximum hourly door skin production [MSF-1/8"/hr] = 21.59 (4)

Press Vent baghouse TSP/PM10 control efficiency [%] = 99.90% (5)

(b) Maximum annual emissions (tons/yr) = (annual door skin production [MSF-1/8"/yr]) x (emission factor [lbs/MSF-1/8"]) x (1-baghouse TSP/PM10 control efficiency) / (2000 lbs/t

Maximum annual door skin production [MSF-1/8"/yr] = 179,683.9 (4)

Notes:

(1) Emission factors were taken from an engineering source test performed at the JELD-WEN, Wood Fiber Division - Craigsville, West Virginia facility in April 2003. Calculations assume that 100% of TSP is PM_{10} / $PM_{2.5}$.

(2) Emission factors were taken from AP-42, Chapter 10.6.3, Table 10.6.3-6, Medium Density Fiberboard Manufacturing (expressed as VOC as methane). This factor includes the emissions of some HAPs, however, may not accurately estimate emissions of VOC.

(3) Emission factors were taken from AP-42, Chapter 10.6.3, Medium Density Fiberboard (8/2002).

(4) See Table 1, Process Rates.

(5) See Table 9, Baghouse TSP/PM10 Emissions

JELD-WEN WINDOWS & DOORS

Table 7b

Furnish Dryer HAP/VOC Emissions TO BIOFILTER

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/ODT)		Maximum Uncontrolled Emissions **TO BIOFILTER**			
			lbs/hr [(a)]		tons/yr [(b)]	
VOC	2.29	(1)	30.65	(a)	67.8	(b)
CO		(2)	1.68	(2)	7.0	(2)
NOx		(2)	1.96	(2)	8.2	(2)

Calculations:

(a) Maximum hourly emissions (lbs/hr) = ((maximum hourly dryer throughput [dry-lbs/hr]) / 2000 x (emission factor [lbs/ODT]) + Press Vent emissions (PV) + Dryer natural gas combustion emissions

Maximum hourly dryer throughput [dry-lbs/hr] = 23,942 (3)

(b) Maximum annual emissions (tons/yr) = ((maximum annual dryer throughput [BDT/yr]) x (emission factor [lbs/ODT]) / 2000 + Press Vent emissions (PV) + Dryer natural gas combustion emissions

Maximum annual dryer throughput [dry-tons/yr] one line = 47,500 (3)

Notes:

(1) Emission factors were taken from AP-42, Chapter 10.6.3, Table 10.6.3-3, Medium Density Fiberboard Manufacturing (expressed as VOC as methane). This factor includes the emissions of some HAPs, however, may not accurately estimate emissions of VOC.

(2) See Table 7a, Press Vents Emissions TO BIOFILTER and Table 7d Furnish Dryer Natural Gas Combustion Criteria Pollutant Emissions TO BIOFILTER. Press Vent and Dryer natural gas combustions emissions are vented into the Dryer (D1) inlet.

(3) See Table 1, Production and Process Rates.

JELD-WEN WINDOWS & DOORS

Table 7c

Furnish Dryer Natural Gas Combustion Criteria Pollutant Emissions TO BIOFILTER
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MMscf)		Maximum Uncontrolled Emissions **TO BIOFILTER**	
			lbs/hr [(a)]	tons/yr [(b)]
TSP	7.60	(2)	7.1E-07	2.9E-06
PM10	5.70	(3)	5.3E-07	2.2E-06
PM2.5	1.90	(3)	1.8E-07	7.3E-07
SO2	0.60	(2)	0.01	0.05
CO	84.00	(2)	1.56	6.5
NOx	100.00	(2)	1.86	7.7
VOC	5.50	(2)	1.0E-01	4.2E-01
Lead	0.00	(2)	9.3E-06	3.9E-05
N_2O	0.00	(4)	5.36E-03	0.02
CH_4	0.00	(4)	0.05	0.22
CO_2	142.00	(4)	2,840	11,817

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly dryer combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly dryer combustion [MMBtu/hr] = 20.0 (5)

Natural gas heating value [MMBtu/MMscf] = 1,077 (6)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual dryer combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual dryer combustion [MMBtu/yr] = 166,440 (5)

Natural gas heating value [MMBtu/MMscf] = 1,077 (6)

Notes:

(1) Emissions from the furnish dryer are controlled by baghouses. Since the control device is not included in the AP-42 emission factor, particulate emissions include the control effect of the baghouses and the dryer cyclone.

(2) Emission factors were taken from AP-42, Chapter 1.4, Natural Gas Combustion (7/1998).

(3) Emission factor taken from AP-42, Chapter 1.4, Natural Gas Combustion. PM10= Condensable, PM2.5 = Filterable

(4) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

(5) See Table 1, Production and Process Rates.

(6) Provided by Dominon Hope Natural Gas.

JELD-WEN WINDOWS & DOORS

Table 7d

Furnish Dryer Natural Gas Combustion HAP Emissions TO BIOFILTER

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Uncontrolled Emissions **TO BIOFILTER**	
			lbs/hr [(a)]	tons/yr [(b)]
Acenaphthene	0.0000	(1)	3.3E-08	1.4E-07
Acenaphthylene	0.0000	(1)	3.3E-08	1.4E-07
Anthracene	0.0000	(1)	4.5E-08	1.9E-07
Arsenic	0.0002	(2)	3.7E-06	1.5E-05
Benz(a)anthracene	0.0000	(1)	3.3E-08	1.4E-07
Benzene	--	(3)	--	--
Benzo(a)pyrene	0.0000	(1)	2.2E-08	9.3E-08
Benzo(b)fluoranthene	0.0000	(1)	3.3E-08	1.4E-07
Benzo(g,h,i)perylene	0.0000	(1)	2.2E-08	9.3E-08
Benzo(k)fluoranthene	0.0000	(1)	3.3E-08	1.4E-07
Beryllium	0.0000	(2)	2.2E-07	9.3E-07
Cadmium	0.0011	(2)	2.0E-05	8.5E-05
Chromium (total)	0.0014	(2)	2.6E-05	1.1E-04
Chrysene	0.0000	(1)	3.3E-08	1.4E-07
Cobalt	0.0001	(2)	1.6E-06	6.5E-06
Dibenzo(a,h)anthracene	0.0000	(1)	2.2E-08	9.3E-08
Fluoranthene	0.0000	(1)	5.6E-08	2.3E-07
Fluorene	0.0000	(1)	5.2E-08	2.2E-07
Formaldehyde	--	(3)	--	--
Hexane	1.8000	(1)	3.3E-02	1.4E-01
Indeno(1,2,3,c,d)pyrene	0.0000	(1)	3.3E-08	1.4E-07
Manganese	0.0004	(2)	7.1E-06	2.9E-05
Mercury	0.0003	(2)	4.8E-06	2.0E-05
Naphthalene	0.0006	(1)	1.1E-05	4.7E-05
Nickel	0.0021	(2)	3.9E-05	1.6E-04
Phenanthrene	0.0000	(1)	3.2E-07	1.3E-06
Pyrene	0.0000	(1)	9.3E-08	3.9E-07
Selenium	0.0000	(2)	4.5E-07	1.9E-06

Table 7d

Furnish Dryer Natural Gas Combustion HAP Emissions TO BIOFILTER

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Uncontrolled Emissions **TO BIOFILTER**	
			lbs/hr [(a)]	tons/yr [(b)]
Toluene	0.0034	(1)	6.3E-05	2.6E-04
2-Methylnaphthalene	0.0000	(1)	4.5E-07	1.9E-06
3-Methylchloranthrene	0.0000	(1)	3.3E-08	1.4E-07
Dichlorobenzene	0.0012	(1)	2.2E-05	9.3E-05
7,12-Dimethylbenz(a)anthracene	0.0000	(1)	3.0E-07	1.2E-06
	Total HAPs		0.03	0.14

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly dryer combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly dryer combustion [MMBtu/hr] = 20.0 (4)

Natural gas heating value [MMBtu/MMscf] = 1,077 (5)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual dryer combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual dryer combustion [MMBtu/yr] = 166,440 (4)

Natural gas heating value [MMBtu/MMscf] = 1,077 (5)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-3, Emission Factors for Speciated Organic Compounds from Natural Gas Combustion (July 1998).

(2) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-4, Emission Factors for Metals from Natural Gas Combustion (July 1998).

(3) Benzene and formaldehyde emissions are included in Table 7 and were taken from source test data performed at the JELD-WEN, Wood Fiber Division, Craigsville, West Virginia facility.

(4) See Table 1, Production and Process Rates.

(5) Provided by Dominon Hope Natural Gas.

JELD-WEN WINDOWS & DOORS

Table 8

Rotary Valve (pre-refiner) VOC/HAP Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/ODT)		Maximum Emissions lbs/hr		Maximum Emissions tons/yr	
TSP	0.01% of Chip Cyclone Throughput	(1)	2.35	(a)	4.66	(b)
PM10	0.01% of Chip Cyclone Throughput	(1)	0.59	(a)	1.16	(b)
PM 2.5	0.01% of Chip Cyclone Throughput	(1)	0.59	(a)	1.16	(b)
VOC	6.73E-02	(2)	0.81	(c)	1.60	(d)
Acetaldehyde	*3.32E-04*	(3)	*3.97E-03*	(c)	*7.9E-03*	(d)
Acrolein	1.09E-02	(3)	1.31E-01	(c)	2.6E-01	(d)
Formaldehyde	6.64E-04	(3)	7.94E-03	(c)	1.6E-02	(d)
Methanol	3.23E-02	(3)	3.86E-01	(c)	7.7E-01	(d)
Phenol	*3.32E-04*	(3)	*3.97E-03*	(c)	*7.9E-03*	(d)
Propionaldehyde	*3.32E-04*	(3)	*3.97E-03*	(c)	*7.9E-03*	(d)
	Total HAP		0.54		1.07	

Calculations:

(a) Maximum hourly TSP emissions (lbs/hr) = ((maximum hourly chip cyclone throughput [OD-lbs/hr]) x (Chip Cyclone Efficiency [%]) x 0.01%)

Maximum Hourly Chip Cyclone Throughput [OD-lbs/hr] = 23,944 (4)

Chip Cyclone Efficiency = 98% (5)

(b) Maximum annual emissions (tons/year) = ((maximum annual chip cyclone throughput [ODT/yr]) x (Chip Cyclone Efficiency [%]) x 0.01%)

Maximum Annual Chip Cleaning Cyclone Throughput [ODT/year] = 47,504 (4)

(c) Maximum hourly VOC/HAP emissions (lbs/hr) = ((maximum hourly chip cyclone throughput [OD-lbs/hr])/2000 x (emission factor [lbs/ODT])

(d) Maximum annual VOC/HAP emissions (tons/year) = ((maximum annual chip cyclone throughput [ODT/yr]) x (emission factor [lbs/ODT]) / (2000 [lbs/ton])

Notes:

(1) Engineering Judgment Provided by JELD-WEN Engineering.
The PM2.5 emissions were assumed to be 25% of the TSP emissions.
The PM_{10} emissions were assumed to be 25% of the TSP emissions.

(2) VOC emission factor is based on sum of HAP emission factors times 1.5 safety factor. This factor is an estimation of VOCs from this emission point.

(3) Emission factors were taken from a MACT source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia facility on March 20,2007.
Non-detects were assumed at the detection level and are represented in italics

(4) See Table 1, Production and Process Rates.

(5) See Table 9, Baghouse TSP/PM10 Emissions.

JELD-WEN WINDOWS & DOORS

Table 9
Baghouse TSP/PM_{10} Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Source ID	Emission Point ID	Maximum Hourly Throughput (lbs/hr)	Maximum Annual Throughput (ODT/yr)	Control Efficiency (%)	Maximum Emissions (1)	
						lbs/hr (a)	tons/yr (b)
Dryer Cyclone	C1	E18	30,250 (2)	59,836 (2)	99.00% (12)	-- (17)	-- (17)
Dryer Baghouse #1	BH1a	E18	110.9 (3)	219.4 (3)	99.95% (13)	0.06 (21)	0.11
Dryer Baghouse #2	BH1b	E18	110.9 (3)	219.4 (3)	99.95% (13)	0.06 (21)	0.11
Dryer Baghouse #3	BH1c	E18	110.9 (3)	219.4 (3)	99.95% (13)	0.06 (21)	0.11
Dryer BH Purge Cyclone	C8	E18	302.4 (20)	598.06 (20)	90.00% (15)	-- (17)	-- (17)
Former Baghouse	BH2	E10	907 (4)	1,753 (4)	99.90% (14)	0.91	1.75
Waste Baghouse	BH3	E4	366 (5)	692 (5)	99.90% (14)	0.37	0.69
Recycle Cyclone	C2	E4	1,370 (6)	2,570 (6)	95.00% (15)	-- (17)	-- (17)
Waste Cyclone	C3	E4	2,975 (7)	5,632 (7)	90.00% (16)	-- (17)	-- (17)
Middle Reject Cyclone	C4	E4	1,370 (8)	2,570 (8)	95.00% (15)	-- (17)	-- (17)
Chip Cyclone	C6	E4	23,944 (9)	47,504 (9)	98.00% (15)	-- (17)	-- (17)
Sizer Baghouse	BH4	E12	12,222 (10)	8,444 (10)	99.95% (14)	6.11	4.22
Chip Cleaning Cyclone	C5	E12	2,602 (11)	1,465 (11)	95.00% (15)	-- (17)	-- (17)
Press Vent Baghouse	BH6	E18	3.6 (19)	9.3 (19)	99.90% (14)	3.58E-03 (22)	0.01
Press Vent BH Purge Cyclone	C7	E18	3.2 (20)	8.5 (20)	90.00% (15)	-- (17)	-- (17)

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly throughput [lbs/hr]) x (1 - control efficiency [%])

(b) Maximum annual emissions (tons/yr) = (maximum hourly throughput [ODT/yr]) x (1 - control efficiency [%])

Notes:

(1) JELD-WEN estimates the 29% of the particulate would actually be PM_{10} based on extrapolation of data provided the by the manufacturer on a similar product with larger particle size. For conservatism JELD-WEN's calculations assume that 100% of TSP is PM10.

(2) The dryer cyclone throughput is the sum of the refiner throughput plus the wax used for door skins and 20% of the shave off before the blender.

(3) The three dryer baghouses are equal to one-third of the dryer cyclone throughput after the cyclone control efficiency has been applied.

(4) The former baghouse throughput is equal to 1.5% of the former throughput plus exhaust from the chip cyclone.

(5) The waste baghouse throughput is equal to the waste and middle reject throughputs after the cyclone control efficiencies have been applied.

(6) The recycle cyclone throughput is equal to 5% of the material from the reject screw.

(7) The waste cyclone throughput is equal to the exhaust from the recycle cyclone and the fuel silos, 1.25% of the throughput of the shave off and trim, and material from the reject screw and former baghouse.

(8) The middle reject cyclone throughput is equal to the material from the reject screw.

(9) The chip cyclone throughput is equal to the throughput of the dryer plus the emissions of the rotary valve.

(10) The sizer baghouse throughput is equal to the exhaust from chip cleaning cyclone plus the material from skin sizer, 80% of the hogged skins, and the usage of sodium carbonate in the die cleaning process.

Soda Blasting (lbs/hr)= 120 (18)
Soda Blasting (ODT/yr)= 22 (18)

(11) The chip cleaning cyclone throughput is equal to 20% of the hogged skins.

(12) Conservative engineering judgment; manufacturer predicted efficiency is 99.468%.

(13) Based on data provided by Westec.

(14) Conservative engineering judgment; manufacturer predicted efficiency is 99.90%.

(15) Conservative engineering judgment for large wood particles and fiber in cyclone.

(16) Conservative engineering judgment for large wood particles and fiber in cyclone, with some fines.

(17) All cyclones at the facility vent to a baghouse. Cyclone emissions are included in the applicable baghouse emissions.

(18) Soda blasting estimates based on once daily cleaning of eight dies. Each die can require up to 15 lbs of sodium bicarbonate per cleaning event.

(19) press vent baghouse (BH6) throughput is equal to the press vent (PV) emissions + rotary valve emissions + press vent cyclone emissions

(20) The press vent cyclone throughput is equal to the press vent baghouse (BH6) throughput - press vent baghouse (BH6) emissions.

(21) Particulate emissions form the dryer baghouses (BH1a, BH1b, & BH1c) are vented to the biofilter (BF, E18)

(22) Particulate emissions form press vent baghouse (BH6) vent to the dryer (D1) air inlet which eventually vents to the biofilter (BF, E18)

JELD-WEN WINDOWS & DOORS

Table 10

Baghouse VOC/HAP Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Source ID	Emission Point ID	Maximum Hourly Throughput	Maximum Annual Throughput	Pollutant	Emission Factor [1] (lbs/SF-1/8")	Maximum Emissions	
							lbs/hr [a]	tons/yr [b]
Former Baghouse	BH2	E10	21,591 [2] (SF-1/8"/hr)	179,683,869 [2] (SF-1/8"/year)	Formaldehyde	3.5E-06 lbs/SF-1/8"	0.08	0.31
					Methanol	6.0E-06 lbs/SF-1/8"	0.13	0.54
Waste Baghouse	BH3	E4	21,591 [2] (SF-1/8"/hr)	179,683,869 [2] (SF-1/8"/year)	Formaldehyde	9.2E-06 lbs/SF-1/8"	0.20	0.82
Sizer Baghouse	BH4	E12	12,222 [3] (lbs/hr)	8,444 [3] (ODT/year)	Formaldehyde	1.9E-05 lbs/lb-waste	0.23	0.16
						Total VOC/HAP [4]	0.63	1.8

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly throughput [units/hr]) x (emission factor [lbs/unit])

(b) Maximum annual emissions (tons/yr) = (maximum annual throughput [SF-$^{1}/_{8}$"/year]) x (emission factor [lbs/SF-$^{1}/_{8}$"]) / 2000

or Maximum annual emissions (tons/yr) = (maximum annual throughput [ODT/yr]) x (emission factor [lbs/lb-waste])

Notes:

(1) Emission factors were taken from a MACT source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia facility on March and June 2007. All other pollutants were reported as non-detects.

(2) The former and waste baghouse throughputs have been conservatively assumed to equal the maximum press throughput.

(3) See Table 9, Baghouse Particulate Emissions.

(4) Total VOCs are the sum of the individual HAPs.

JELD-WEN WINDOWS & DOORS

Table 11a

Primeline Ovens (PL - E13) Natural Gas Combustion Criteria Pollutant Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [(a)]	tons/yr [(b)]
TSP	7.6	(1)	0.03	0.11
PM10	5.7	(2)	0.02	0.08
PM 2.5	1.9	(2)	0.01	0.03
SO2	0.6	(1)	0.002	0.01
CO	84	(1)	0.30	1.23
NOx	100	(1)	0.35	1.47
VOC	5.5	(1)	0.02	0.08
Lead	5.0E-04	(1)	1.8E-06	7.3E-06
N_2O	2.68E-04	(3)	1.0E-03	4.2E-03
CH_4	2.68E-03	(3)	0.01	0.04
CO_2	142	(3)	540	2,245

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly oven combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly oven combustion [MMBtu/hr] = 3.8 (4)

Natural gas heating value [MMBtu/MMscf] = 1,077 (5)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual oven combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual oven combustion [MMBtu/yr] = 31,624 (4)

Natural gas heating value [MMBtu/MMscf] = 1,077 (5)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Natural Gas Combustion (7/1998).

(2) Emission factor taken from AP-42, Chapter 1.4, Natural Gas Combustion. PM10= Condensable, PM2.5 = Filterable

(3) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

(4) See Table 1, Production and Process Rates (sum of Oven #1 and Oven #3; Oven #2 is steam-heated).

(5) Provided by Dominon Hope Natural Gas.

JELD-WEN WINDOWS & DOORS

Table 11b
Primeline Ovens (PL - E13) Natural Gas Combustion HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [a]	tons/yr [b]
Acenaphthene	1.8E-06	(1)	6.4E-09	2.6E-08
Acenaphthylene	1.8E-06	(1)	6.4E-09	2.6E-08
Anthracene	2.4E-06	(1)	8.5E-09	3.5E-08
Arsenic	2.0E-04	(2)	7.1E-07	2.9E-06
Benz(a)anthracene	1.8E-06	(1)	6.4E-09	2.6E-08
Benzene	2.1E-03	(1)	7.4E-06	3.1E-05
Benzo(a)pyrene	1.2E-06	(1)	4.2E-09	1.8E-08
Benzo(b)fluoranthene	1.8E-06	(1)	6.4E-09	2.6E-08
Benzo(g,h,i)perylene	1.2E-06	(1)	4.2E-09	1.8E-08
Benzo(k)fluoranthene	1.8E-06	(1)	6.4E-09	2.6E-08
Beryllium	1.2E-05	(2)	4.2E-08	1.8E-07
Cadmium	1.1E-03	(2)	3.9E-06	1.6E-05
Chromium (total)	1.4E-03	(2)	4.9E-06	2.1E-05
Chrysene	1.8E-06	(1)	6.4E-09	2.6E-08
Cobalt	8.4E-05	(2)	3.0E-07	1.2E-06
Dibenzo(a,h)anthracene	1.2E-06	(1)	4.2E-09	1.8E-08
Fluoranthene	3.0E-06	(1)	1.1E-08	4.4E-08
Fluorene	2.8E-06	(1)	9.9E-09	4.1E-08
Formaldehyde	7.5E-02	(1)	2.6E-04	0.001
Hexane	1.8E+00	(1)	6.4E-03	2.6E-02
Indeno(1,2,3,c,d)pyrene	1.8E-06	(1)	6.4E-09	2.6E-08
Manganese	3.8E-04	(2)	1.3E-06	5.6E-06
Mercury	2.6E-04	(2)	9.2E-07	3.8E-06
Naphthalene	6.1E-04	(1)	2.2E-06	9.0E-06
Nickel	2.1E-03	(2)	7.4E-06	3.1E-05
Phenanthrene	1.7E-05	(1)	6.0E-08	2.5E-07
Pyrene	5.0E-06	(1)	1.8E-08	7.3E-08
Selenium	2.4E-05	(2)	8.5E-08	3.5E-07

Table 11b
Primeline Ovens (PL - E13) Natural Gas Combustion HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [a]	tons/yr [b]
Toluene	3.4E-03	(1)	1.2E-05	5.0E-05
2-Methylnaphthalene	2.4E-05	(1)	8.5E-08	3.5E-07
3-Methylchloranthrene	1.8E-06	(1)	6.4E-09	2.6E-08
Dichlorobenzene	1.2E-03	(1)	4.2E-06	1.8E-05
7,12-Dimethylbenz(a)anthracene	1.6E-05	(1)	5.6E-08	2.3E-07
	Total HAPs		0.01	0.03

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly ovens combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly oven combustion [MMBtu/hr] = 3.8 (3)
Natural gas heating value [MMBtu/MMscf] = 1,077 (4)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual ovens combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual ovens combustion [MMBtu/yr] = 31,624 (3)
Natural gas heating value [MMBtu/MMscf] = 1,077 (4)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-3, Emission Factors for Speciated Organic Compounds from Natural Gas Combustion (July 1998).

(2) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-4, Emission Factors for Metals from Natural Gas Combustion (July 1998).

(3) See Table 1, Production and Process Rates (sum of Oven #1 and Oven #3; Oven #2 is steam-heated).

(4) Provided by Dominon Hope Natural Gas.

JELD-WEN WINDOWS & DOORS

Table 12
Primeline Paint Booth (PL - E14) VOC, HAP, and Particulate Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Material [1]	Pollutant	Maximum Emissions			
		lbs/hr		tons/yr	
Interior Primers JELD-WEN	Total VOC	21.31	(a)	80.18	(b)
	Total HAPs	0.18	(a)	0.67	(b)
	Styrene	0.03	(a)	0.09	(b)
	Methyl Methacrylate	0.01	(a)	0.02	(b)
	Formaldehyde	0.01	(a)	0.04	(b)
	Glycol Ether	0.13	(a)	0.49	(b)
	PM/PM10/PM2.5 (1)	0.59	(c)	2.22	(d)

Maximum hourly primer usage [gals/hr] =	71.0	(2)
Maximum annual primer usage [gals/yr] =	534,560	(2)
Percent interior primer usage [%] =	100.0%	(3)
Interior primer VOC content [lbs/gal] =	3.0E-01	(4)
Interior primer HAP content [lbs/gal] =	2.5E-03	(4)
Styrene content [lbs/gal] =	3.6E-04	(4)
Methyl Methacrylate content [lbs/gal] =	7.1E-05	(4)
Formaldehyde content [lbs/gal] =	1.4E-04	(4)
Glycol Ether content [lbs/gal] =	1.8E-03	(4)
Interior primer density [lbs/gal] =	13.86	(4)
Interior primer solids content [wt %] =	69.0%	(4)

Calculations:

(a) Maximum hourly VOC/HAP emissions (lbs/hr) = (maximum hourly primer usage [gals/hr]) x (percent primer usage [%]) x (VOC/HAP content [lbs/gal])

(b) Maximum annual VOC emissions (tons/yr) = (maximum annual primer usage [gals/yr]) x (percent primer usage [%]) x (VOC content [lbs/gal]) / (2000 lbs/ton)

(c) Maximum hourly PM emissions (lbs/hr) = (maximum hourly primer usage [gals/hr]) x (percent primer usage [%]) x (PM Emission Factor [lbs/gal])

(d) Maximum annual PM emissions (tons/yr) = (maximum annual primer usage [gals/yr]) x (percent primer usage [%]) x (PM Emission Factor [lbs/gal])/2000

Notes:

(1) PM Calculations assume that 100% of PM is PM2.5.
The emission factor is equal to the average of the test values plus two standard deviations.
PM Emission Factor [lbs/gal] = 0.0083

(2) See Table 1, Production and Process Rates.

(3) Provided by JELD-WEN Wood Fiber Division - West Virginia.

(4) From vendor MSDS sheet, product information sheet, or telephone conversation with the vendor.

JELD-WEN WINDOWS & DOORS

Table 13
Material Handling Conveyors Particulate Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Maximum Hourly Throughput [1] (tons/hr)	Pollutant	Maximum Emissions	
			lbs/hr [a]	tons/yr [b]
Truck Dump to Rotary Classifier (CV1) - Furnish	18.4	PM	0.43	0.67
		PM10	0.20	0.32
		PM2.5	0.03	0.05
Rotary Classifier to Metal Detector (CV2) - Furnish	18.4	PM	0.43	0.67
		PM10	0.20	0.32
		PM2.5	0.03	0.05
Metal Detector to Furnish Silo (CV3) - Furnish	18.4	PM	0.43	0.67
		PM10	0.20	0.32
		PM2.5	0.03	0.05
Furnish Storage Silo to Refiner (CV4) - Furnish	12.0	PM	0.28	1.09
		PM10	0.13	0.52
		PM2.5	0.02	0.08
Fuel Storage Silo to Boiler (CV5) - Hogged Fuel	3.9	PM	1.96	7.73
		PM10	0.93	3.66
		PM2.5	0.14	0.55
		Total TSP	3.51	10.83
		Total PM10	1.66	5.12
		Total PM2.5	0.25	0.78

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly throughput [tons/hr]) x (emission factor [lbs/ton])

Furnish PM emission factor (lbs/ton) =	0.02	(c)
Hogged Fuel PM emission factor (lbs/ton) =	0.50	(c)
Furnish PM10 emission factor (lbs/ton) =	0.01	(c)
Hogged Fuel PM10 emission factor (lbs/ton) =	0.24	(c)
Furnish PM2.5 emission factor (lbs/ton) =	0.00	(c)
Hogged Fuel PM2.5 emission factor (lbs/ton) =	0.04	(c)

(b) Maximum annual emissions (tons/yr) = (maximum hourly emissions [tons/yr]) x (truck dump hours of operation [hrs/yr[) / (2000 lbs/ton)

Truck dump hours of operation [hrs/yr] =	3,143	(2)
Boiler & Silo conveyor hours of operation [hrs/yr] =	7,884	(2)

(c) Emission factor (lbs/ton) = (particle size multiplier) x (0.0032) x (((wind speed [mph] / 5)^1.3) / ((moisture content [wt%] / 2)^1.4))

PM Particle size multiplier =	0.74	(3)
PM10 Particle size multiplier =	0.35	(3)
PM2.5 Particle size multiplier =	0.053	(3)
Wind speed (mph) =	5.8	(4)
Furnish moisture content [%] =	45%	(5)
Hogged fuel moisture content [%] =	5%	(5)

Notes:

(1) Hourly capacities based on maximum hourly furnish truck dump throughput (BD-lbs/hr) = (number of trucks per hour [trucks/hr]) x (weight of truck load [wet-lbs/hr]) x (1 - moisture content [%])

Number of trucks per hour [trucks/hr] =	1.33	(5)
Weight per truck load [wet-lbs/truck] =	50,195	(5)
Moisture content [%] =	45%	(5)

Maximum hourly fuel truck dump throughput (BD-lbs/hr) = (maximum wood fuel purchased [lbs/hr]) x (1 - moisture content [%])

Maximum wood fuel purchased [lbs/hr] =	4,700	(6)
Moisture content [%] =	45%	(5)

(2) See Table 1, Production and Process Rates.

(3) Emission factor equation and constants were taken from AP-42, Chapter 13.2.4, Aggregate Handling and Storage Piles (11/2006).

(4) A 57 year annual average wind speed for Charleston, WV take from the Comparative Climatic Data for the United States through 2004 from the National Climatic Data Center Website.

(5) Provided by JELD-WEN Wood Fiber Division - West Virginia.

(6) An estimate of fuel required, in addition to fuel from production operations, in order to operate the boiler at rated capacity.

JELD-WEN WINDOWS & DOORS

Table 14
Paint Manufacturing (DC2 - E15) VOC/HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Raw Material		Pollutant	VOC/HAP Content [1]		Maximum Annual Usage [2] (gals/yr)	Maximum Emissions	
Material	Density [1] (lbs/gal)					lbs/hr [a]	tons/yr [c]
Dispersing Agent	8.97	Total VOC	70	wt %	7,718	0.044	0.080
Fungicide	8.85	Total VOC	6.56	lbs/gal	2,055	0.012	0.022
		Glycol Ether	40	wt %		0.007	0.012
Preservative	9.26	Total VOC	0.15	lbs/gal	2,400	0.000	0.001
		Formaldehyde	1.5	wt %		0.0003	0.001
Polymer	8.6	Total VOC	0.014	lbs/gal	296,400	0.004	0.007
		Glycol Ether	0.090	wt %		0.002	0.004
		Styrene	0.050	wt %		0.001	0.002
Additive	8.93	Total VOC	0.010	lbs/gal	197,400	0.002	0.003
Glycol Ether	8.62	Total VOC	7.910	lbs/gal	39,717	0.288	0.518
		Glycol Ether	99.000	wt%		0.311	0.559
Alkyl	7.43	Total VOC	7.430	lbs/gal	3,544	0.024	0.043
Pigment	15.65	Total VOC	0.080	lbs/gal	1,723	0.000	0.000
Solution	7.73	Total VOC	3.680	lbs/gal	37,616	0.127	0.228
Defoamer	7.34	Total VOC	0.22	lbs/gal	11,400	0.002	0.004
					Total VOC	0.50	0.91
					Total HAP	0.32	0.58

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum annual emissions [tons/yr]) x (2000 lbs/ton) / (paint manufacturing hours of operation [hrs/yr])

Paint manufacturing hours of operation [hrs/yr] = 3,600 (b)

(b) Paint manufacturing hours of operation (hrs/yr) = (maximum annual batch rate [batch/yr]) x (hourly batch rate [hrs/batch])

Maximum annual batch rate [batch/yr] = 600 (2)

Hourly batch rate [hrs/batch] = 6 (2)

(c) Maximum annual emissions (tons/yr) = (maximum annual product usage [gals/yr]) x (density [lbs/gal]) x (VOC/HAP content [wt %]) x (percent VOC/HAP

Maximum annual emissions (tons/yr) = (maximum annual product usage [gals/yr]) x (VOC/HAP content [lbs/gal]) x (percent VOC/HAP loss [%]) / (2000 lb

Percent VOC/HAP loss [%] = 0.33% (3)

Notes:

(1) From vendor MSDS sheet, product information sheet, or telephone conversation with the vendor.

(2) Provided by JELD-WEN Wood Fiber Division - West Virginia.

(3) JELD-WEN laboratory testing under actual process conditions, excluding water.

JELD-WEN WINDOWS & DOORS

Table 15
Paint Manufacturing (DC2, BH5 - E15) Particulate Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Maximum Annual Usage [1] (tons/yr)	Annual Throughput (Before Baghouse) [a] (tons/yr)	Maximum Emissions [2]	
			lbs/hr [b]	tons/yr [c]
Titanium Dioxide	600	0.94	5.2E-04	9.4E-04
Calcium Carbonate Slurry	5,504	8.64	4.8E-03	8.6E-03
Talc	1800	2.83	1.6E-03	2.8E-03
Pigment	7.50	0.01	6.5E-06	1.2E-05
Additives	1,800	2.83	1.6E-03	2.8E-03
Various KLN Clays	400.0	0.63	3.5E-04	6.3E-04
		Total TSP	0.01	0.02

Calculations:

(a) Maximum annual throughput before baghouse (tons/yr) = (maximum annual usage [tons/yr]) x (dust generation factor [lbs/ton]) / (2000 lbs/ton)
Dust generation factor [lbs/ton] = 3.14 (3)

(b) Maximum hourly emissions (lbs/hr) = (maximum annual emissions [tons/yr]) x (2000 lbs/ton) / (paint manufacturing hours of operation [hrs/yr])
Paint manufacturing hours of operation [hrs/yr] = 3,600 (4)

(c) Maximum annual emissions (tons/yr) = (maximum annual throughput before baghouse [ton/yr]) x (1 - baghouse control efficiency [%])
Baghouse control efficiency (%) = 99.9% (1)

Notes:

(1) Provided by JELD-WEN Wood Fiber Division - West Virginia.
(2) Calculations assume that 100% of TSP is $PM_{10}/PM_{2.5}$.
(3) From AP-42, Chapter 11.12, Table 11.12-2, Total Particulate Matter Emission Factor for Uncontrolled Cement Unloading to an Elevated Storage Silo (10/2001).
(4) See Table 20, Paint Manufacturing VOC/HAP Emissions.

JELD-WEN WINDOWS & DOORS

Table 16
Die Coating (DC-E17) Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Raw Material [1]			Hourly PTE Usage (gal)[2]	Annual PTE Usage (gal)[3]	Raw Material Components [1]			Estimated PTE [3]					
Product	Density (lbs/gal)	Solids Content (wt %)			Name	Amount in Product	Units	VOC [a] (lbs/hr)	VOC [b] (tons/yr)	HAP [a] (lbs/hr)	HAP [b] (tons/yr)	TSP/PM10 [c,4] (lbs/hr)	TSP/PM10 [c,4] (tons/yr)
Cleaner Degreaser (wipe-on cleaner)	8.85		0.50	500	Total VOC	3.98	wt%	0.18	0.1				
					Diethylene glycol monbutyl ether	3	wt%			0.13	0.07		
Isopropyl Alcohol (wipe-on cleaner)	6.59		0.22	216	Total VOC	100	wt%	1.42	0.7				
Die Coating	10.85	63.5	0.14	145	Total VOC	46	wt%	0.72	0.4			0.01	0.01
					Methanol	8	wt%			0.13	0.06		
					Silane	28	wt%						
					Isopropyl Alcohol	5	wt%						
					Ethyl Alcohol	5	wt%						
					Totals			2.32	1.2	0.26	0.1	1.5E-02	7.5E-03

Calculations:

(a) Hourly PTE emissions [lbs/hr] = (hourly PTE usage [gals/hr]) x (density [lbs/gal]) x (VOC/HAP content [wt%])

(b) Annual PTE VOC/HAP emissions [tons/yr] = (annual PTE usage [gals/yr]) x (density [lbs/gal]) x (VOC/HAP content [wt%]) / (2000 [lbs/ton])

(c) Annual PTE TSP emissions [tons/yr] = (annual PTE usage [gal/yr]) x (density [lbs/gal]) x (1 - spray transfer efficiency [%]) / 100) x (solids content [wt %] / 100) x (1 - spray booth filter efficiency [%]) / 100)) / 2000 [lbs/ton]

Spray Transfer Efficiency [%] = 70 (5)

Filter Efficiency [%] = 95 (5)

Notes:

(1) Based on maximum from manufacturer's product MSDS.

(2) Hourly product usage conservatively estimated based on several months of product trials at JELD-WEN Wood Fiber of Oregon.

(3) Annual product usage conservatively estimated based on the volume required to clean and coat dies for each press opening once every seven days of production. JELD-WEN Engineering estimates dies will be coated a maximum of once every 14 days of production based on several months of product trials at JELD-WEN Wood Fiber Division - Oregon.

(4) 100% of PM is assumed to be PM_{10} and $PM_{2.5}$.

(5) Conservative engineering estimate.

JELD-WEN WINDOWS & DOORS

Table 17
Maximum Annual Emissions Summary
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Point	Emission Point ID #	Maximum Annual Emissions (tons/yr)										
		TSP	PM10	PM 2.5	SO_2	CO	NOx	VOC	Lead	N_2O	CH_4	CO_2
Wood Boiler (B1)	E5	4.28	4.28	4.28	6.50	84.3	138.3	4.51	0.01	2.41	18.35	53,779
Natural Gas Boiler (B2)	E6	1.11	0.83	0.28	0.09	0.10	24.8	0.80	0.00	0.04	0.42	22,275
Truck Dump (TD)	E1	4.90	1.23	1.23	--	--	--	--	--	--	--	--
East Furnish Silo (FSE)	E2a,b,c,d,e	2.02	0.50	0.50	--	--	--	--	--	--	--	--
West Furnish Silo (FSW)	E3a,b,c,d,e	2.02	0.50	0.50	--	--	--	--	--	--	--	--
Former Baghouse (BH2)	E10	1.75	1.75	1.75	--	--	--	0.31	--	--	--	--
Waste Baghouse (BH3)	E4	0.69	0.69	0.69	--	--	--	0.82	--	--	--	--
Sizer Baghouse (BH4)	E12	4.22	4.22	4.22	--	--	--	0.16	--	--	--	--
Primeline - Ovens (PL)	E13	0.11	0.08	0.03	0.01	1.23	1.47	0.08	0.00	0.004	0.04	2,245
Primeline Paint Booth (PL)	E14	2.22	2.22	2.22	--	--	--	80.2	--	--	--	--
Facility-Wide VOCs (FWVOC)	FWVOC	--	--	--	--	--	--	--	--	--	--	--
Conveyors (CV1 - CV5)	Fugitive	10.83	5.12	0.78	--	--	--	--	--	--	--	--
Paint Manufacturing (DC2)	E15	0.02	0.02	0.02	--	--	--	0.91	--	--	--	--
Rotary Valve (RV)	E16	4.66	1.16	1.16	--	--	--	1.60	--	--	--	--
Die Coating Paint Booth (DC)	E17	0.01	0.01	0.01	--	--	--	1.16	--	--	--	--
Biofilter (BF)	E18	0.34	0.34	0.34	0.05	7.00	8.18	64.45	0.00	0.02	0.22	11,817
Pollutant Total		39.2	23.0	18.0	6.6	92.6	172.8	155.0	0.0126	2.5	19.0	90,117

Table 18
Maximum HAP Emissions Summary
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Point	Maximum Emissions	
	Hourly (lbs/hr)	Annual (tons/yr)
Total Formaldehyde (excluding NG combustion)	0.83	2.63
Total Methanol	0.35	1.45
Total HAPs from Hogged-Fuel Boiler (B1)	2.42	10.05
Total HAPs from Natural Gas Boiler (B2)	0.07	0.27
Total HAPs from Biofilter	0.55	2.28
Total HAPs from Rotary Valve (RV)	0.54	1.07
Total HAPs from Baghouses (B2, B3, B4)	0.63	1.83
Total HAPs from Primeline (PL)	0.67	0.70
Total HAPs from Paint Manufacturing (DC2)	0.32	0.58
Total HAPs from Die Coating (DC)	0.26	0.13
Total HAP	**5.5**	**16.90**

JELD-WEN WINDOWS & DOORS

Table 19
Maximum HAP Emissions Detailed Summary
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Wood-Fired Boiler (tons/yr)	Natural Gas- Fired Boiler (tons/yr)	Rotary Valve (tons/yr)	Biofilter Outlet (tons/yr)	Baghouses (tons/yr)	Paint Manufacturing (tons/yr)	Prime Line (tons/yr)	Die Coating (tons/yr)	Potential Emissions (tons/yr)
Acenaphthene	2.4E-04	2.6E-07		1.4E-07			2.6E-08		**2.4E-04**
Acenaphthylene	1.3E-03	2.6E-07		1.4E-07			2.6E-08		**1.3E-03**
Acetaldehyde	2.2E-01		7.9E-03	0.1					**3.6E-01**
Acetophenone	8.3E-07								**8.3E-07**
Acrolein	1.0E+00		2.6E-01	0.1					**1.4E+00**
Anthracene	7.8E-04	3.5E-07		1.9E-07			3.5E-08		**7.8E-04**
Antimony	2.1E-03								**2.1E-03**
Arsenic	5.7E-03	2.9E-05		1.5E-05			2.9E-06		**5.8E-03**
Benzene	1.1	3.1E-04		6.3E-02			3.1E-05		**1.2E+00**
Benzo(a)anthracene	1.7E-05	2.6E-07		1.4E-07			2.6E-08		**1.7E-05**
Benzo(a)pyrene	6.8E-04	1.7E-07		9.3E-08			1.8E-08		**6.8E-04**
Benzo(b)fluoranthene	2.6E-05	2.6E-07		1.4E-07			2.6E-08		**2.6E-05**
Benzo(g,h,i)perylene	2.4E-05	1.7E-07		9.3E-08			1.8E-08		**2.4E-05**
Benzo(k)fluoranthene	9.4E-06	2.6E-07		1.4E-07			2.6E-08		**9.8E-06**
Beryllium	2.9E-04	1.7E-06		9.3E-07			1.8E-07		**2.9E-04**
bis(2-Ethylhexyl)phthalate	1.2E-05								**1.2E-05**
Bromomethane (Methyl Bromide)	3.9E-03								**3.9E-03**
Cadmium	1.1E-03	1.6E-04		8.5E-05			1.6E-05		**1.3E-03**
Carbon tetrachloride	1.2E-02								**1.2E-02**
Chlorine	2.1E-01								**2.1E-01**
Chlorobenzene	8.6E-03								**8.6E-03**
Chloroform	7.3E-03								**7.3E-03**
Chloromethane (Methyl Chloride)	6.0E-03								**6.0E-03**
Chromium (Total)	5.5E-03	2.0E-04		1.1E-04			2.1E-05		**5.8E-03**
Chrysene	9.9E-06	2.6E-07		1.4E-07			2.6E-08		**1.0E-05**
Cobalt	1.7E-03	1.2E-05		6.5E-06			1.2E-06		**1.7E-03**
Dibenzo(a,h)anthracene	2.4E-06	1.7E-07		9.3E-08			1.8E-08		**2.7E-06**
Dichlorobenzene		1.7E-04		9.3E-05			1.8E-05		**2.9E-04**
1,2-Dichloroethane (Ethylene dichloride)	7.5E-03								**7.5E-03**
Dichloromethane (Methylene Chloride)	7.5E-02								**7.5E-02**
1,2-Dichloropropane (Propylene dichloride)	8.6E-03								**8.6E-03**
7,12-Dimethylbenz(a)anthracene		2.3E-06		1.2E-06			2.3E-07		**3.8E-06**
2,4-Dinitrophenol	4.7E-05								**4.7E-05**
Ethylbenzene	8.1E-03								**8.1E-03**
Fluoranthene	4.2E-04	4.4E-07		2.3E-07			4.4E-08		**4.2E-04**
Fluorene	8.8E-04	4.1E-07		2.2E-07			4.1E-08		**8.8E-04**
Formaldehyde	1.14	0.011	0.02	0.2	1.3	0.001	3.7E-02		**2.7E+00**
Glycol ethers						5.8E-01	4.9E-01	6.6E-02	**1.1E+00**
Hexane		2.6E-01		1.4E-01			2.6E-02		**4.3E-01**
Hydrogen chloride	4.9								**4.9E+00**
Indeno(1,2,3,c,d)pyrene	2.3E-05	2.6E-07		1.4E-07			2.6E-08		**2.3E-05**
Lead	1.2E-02	7.3E-05		3.9E-05			7.3E-06		**1.3E-02**
Manganese	0.42	0.00		0.00			5.58E-06		**0.42**
Mercury	0.00	0.00		0.00			3.82E-06		**0.00**
Methanol			0.77	0.91	0.54			0.06	**2.28**
Methyl Methacrylate							1.90E-02		**0.02**
Methylene Diphenyl Diisocyanate (MDI)				0.00					**0.00**
2-Methylnaphthalene		0.00		0.00			3.52E-07		**0.00**
3-Methylchloranthrene		0.00		0.00			2.64E-08		**0.00**
Naphthalene	0.03	0.00		0.00			8.96E-06		**0.03**
Nickel	0.01	0.00		0.00			3.08E-05		**0.01**
4-Nitrophenol	0.00								**0.00**
Pentachlorophenol (PCP)	0.00								**0.00**
Phenanthrene	0.00	0.00		0.00			2.50E-07		**0.00**
Phenol	0.01		0.01	0.68					**0.70**
Polychlorinated Biphenyls	0.00								**0.00**
Polychlorinated dibenzo-p-dioxins	0.00								**0.00**
Polychlorinated dibenzo-p-furans	0.00								**0.00**
Propionaldehyde	0.02		0.01	0.11					**0.14**
Pyrene	0.00	0.00		0.00			7.34E-08		**0.00**
Selenium	0.00	0.00		0.00			3.52E-07		**0.00**
Styrene	0.49					0.002	9.49E-02		**0.59**
Tetrachloroethene	0.01								**0.01**
Toluene	0.24	0.00		0.00			4.99E-05		**0.24**
Trichloroethene	0.01								**0.01**
1,1,1-trichloroethylene (Methyl Chloroform)	0.01								**0.01**
Vinyl chloride	0.00								**0.00**
Xylene	0.01								**0.01**
Totals	**10.05**	**0.28**	**1.07**	**2.28**	**1.83**	**0.58**	**0.67**	**0.13**	**16.87**

JELD-WEN WINDOWS & DOORS

Table 20
TSP/PM_{10} Process Weight Determination
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Point ID	Material Throughput (lb/hr)		Short Term TSP/PM_{10} (lb/hr)		Maximum Allowable Total Stack Emissions [a] (lb/hr)	Meets Emissions Limit (Yes/No)
E4	366.00	(1)	0.37	(1)	0.44	Yes
E7	110.91	(1)	0.06	(1)	0.13	Yes
E8	110.91	(1)	0.06	(1)	0.13	Yes
E9	110.91	(1)	0.06	(1)	0.13	Yes
E10	906.69	(1)	0.91	(1)	1.09	Yes
E12	12,221.58	(1)	6.11	(1)	7.33	Yes
E13	984.56	(3)	0.03	(4)	1.18	Yes
E14a, E14b	984.56	(2)	0.59	(5)	1.18	Yes

Notes:
(a) Maximum allowable total stack emissions (lb/hr) = [Material throughput (lb/hr)] x [linear regression (lbs/lb of throughput)] (6)

References:
(1) Information taken from Table 11, "Baghouse Particulate Emissions".
(2) Information taken from Table 17, "Primeline Paint Booth Particulate Emissions"
(3) Assumes all material placed through paint booth goes to the paint drying ovens.
(4) Information taken from Table 15, "Primeline Ovens".
(5) Information taken from Table 17, "Primeline Paint Booth"
(6) Linear regression taken from Table 26 for material throughput between two stated numbers.

JELD-WEN WINDOWS & DOORS

Table 21

TSP/PM_{10} Process Weight Table

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Operating Source Operation Process Weight Rate [1] (lbs/hr)	Maximum Allowable Total Stack Emissions Type 'a' [1] (lb/hr)	Linear Regression Calculation (lbs/lb of throughput) [a]
0	0.0	---
2,500	3.0	1.20E-03
5,000	5.0	8.00E-04
10,000	10.0	1.00E-03
20,000	16.0	6.00E-04
30,000	22.0	6.00E-04
40,000	28.0	6.00E-04
50,000	31.0	3.00E-04
100,000	33.0	4.00E-05
200,000	37.0	4.00E-05
300,000	40.0	3.00E-05
400,000	43.0	3.00E-05
500,000	47.0	4.00E-05
600,000	50.0	3.00E-05
700,000	50.0	0.00
800,000	50.0	0.00
900,000	50.0	0.00
1,800,000	50.0	0.00

Notes:

(a) Linear regression: ((Actual process throughput [lb/hr]) - (smaller process weight [lb/hr])) / ((larger process weight [lb/hr]) - (smaller process weight [lb/hr]) = ((Actual emissions [lb/hr]) - (smaller allowable emissions [lb/hr])) / ((larger allowable emissions [lb/hr]) - (smaller allowable emissions [lb/hr])

References:

(1) Information from West Virginia Department of Environmental Quality 45CSR7-4.1 Table 45-7A.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
B1	Hogged Fuel-Fired Boiler	MC, ESP

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Wood-fired fuel cell boiler used for facility steam production.

Manufacturer:	**Model number:**	**Serial number:**
Wellons	IDIC8.0	
Construction date:	**Installation date:**	**Modification date(s):**
05/01/1997	05/01/1997	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

62.5MMBtu/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
62.5MMBtu/hr	520,125 MMBtu/yr	8322

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? [X] Yes [ ] No	**If yes, is it?** [ ] Indirect Fired [X] Direct Fired
Maximum design heat input and/or maximum horsepower rating: 62.5 MMBtu/hr	**Type and Btu/hr rating of burners:** Fuel Cell-Closed couples gasifier with vertical cylindrical combusting cell;62.5MMBtu/hr

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Wood Fuel 7,805 BD-lbs/hr, 32,475 BDT/yr

Describe each fuel expected to be used during the term of the permit.

Wood Fuel			8,008 Btu/BD-lb

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	20.25	84.27
Nitrogen Oxides (NO_X)	33.24	138.30
Lead (Pb)	0.003	0.01
Particulate Matter ($PM_{2.5}$)	1.03	4.28
Particulate Matter (PM_{10})	1.03	4.28
Total Particulate Matter (TSP)	1.03	4.28
Sulfur Dioxide (SO_2)	1.56	6.50
Volatile Organic Compounds (VOC)	1.08	4.51
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
See Attachment J, Table 3		
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
N_2O (5)	0.58	2.41
CH_4 (5)	4.41	18.35
CO_2 (5)	12,925	53779.20

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) All emission estimates include the effect of applied control devices.

(2) Emission factors were taken from a source test performed at the JELD-WEN, Craigsville,
West Virginia facility in April 2003. Two standard deviations were added to the results as a safety factor.

(3) Calculations assume that 100% of TSP is $PM_{2.5}$.

(4) Emission factors were taken from AP-42, Chapter 1.6, Wood Residue Combustion (9/2003).

(5) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Conditions
4.1.1., [45CSR §2-3.1., 45CSR16, 40CFR§60.43c(c)]
4.1.2., **[45CSR§2-9.1.]**
4.1.3., **[45CSR §2-4.4.]**
4.1.4., **[45CSR §2-9.2., 45CSR16, 40 CFR §60.11(d)]**
4.1.5., **[45CSR16, 40 CFR §§60.43c(b) and (d)]**
4.1.6., [45CSR13 – Permit R13-2192 §4.1.7.]
4.1.8. **[45CSR §10-3.8.]**
4.1.9. [45CSR §2-5.1.]
4.1.10. [45CSR13 – Permit R13-2192 §4.1.21, 45CSR§13-5.10.]
4.1.11., [45CSR34; 40 CFR §63.11201(b) and Table 2, Item 6 of 40CFR63, Subpart JJJJJJ; 45CSR13 – Permit R13-2192 §4.1.17.]
4.1.12. [45CSR34; 40 CFR §63.11201(b) and Table 2, Item 16 of 40CFR63, Subpart JJJJJJ; 45CSR13 – Permit R13-2192 §4.1.18.]
4.1.13. [45CSR13 – Permit R13-2192 §4.1.19.]
4.1.15. [45CSR34; 40 CFR §§63.11223(a) and (b)]

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)
See Title V Operating Permit R30-06700095-2019 (MM01) Conditions
4.2 Monitoring Requirements
4.2.1., **[45CSR §2-3.2., 45CSR16, 40 CFR §§60.47c(a) & (b)]**
4.2.3., **[45CSR§30-5.1.c.]**

4.3 Testing Requirements
4.3.1., **[45CSR§30-5.1.c.]**
4.3.2. [45CSR13 – Permit R13-2192 §4.2.1.]

4.4 Recordkeeping Requirements
4.4.1., **[45CSR§30-5.1.c.]**
4.4.2., **[45CSR§2-8.3.c., 45CSR§2A-7.1., 40 CFR §60.48c(g), 45CSR16]**
4.4.3., [45CSR13 – Permit R13-2192 §4.3.10.]
4.4.5. [45CSR34; 40 CFR §§63.11225(c)(1), (c)(2), and (d)]

4.5 Reporting Requirements
4.5.1., **[45CSR §2-9.3.]**
4.5.2., **[40 CFR §60.48c(b), 45CSR16]**
4.5.3., **[40 CFR §60.48c(c), 45CSR16]**
4.5.4., **[40 CFR §60.48c(j), 45CSR16]**
4.5.5. [45CSR34; 40 CFR §§63.11225(b), (b)(1), and (b)(2)]

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
B2	Natural Gas-Fired Boiler	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Natural Gas-Fired Boiler

Manufacturer:	**Model number:**	**Serial number:**
Burnham	25113	3P900506060PF
Construction date: 1997	**Installation date:** 1997	**Modification date(s):** 08/31/2001, boiler retubed

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):
37.7 MMBtu/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
37.7 MMBtu/hr	313,739 MMBtu/yr	8322

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? [X] Yes [ ] No	**If yes, is it?** [ ] Indirect Fired [X] Direct Fired
Maximum design heat input and/or maximum horsepower rating: 37.7 MMBtu/hr	**Type and Btu/hr rating of burners:** 37.7 MMBtu/hr

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas 37.7 MMBtu/hr. and 313,739 MMBtu/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	0.022 gr/100 ft^3	0%	1077

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.02	0.10
Nitrogen Oxides (NO_X)	5.97	24.83
Lead (Pb)	0.00002	0.00007
Particulate Matter ($PM_{2.5}$)	0.07	0.28
Particulate Matter (PM_{10})	0.20	0.83
Total Particulate Matter (TSP)	0.27	1.11
Sulfur Dioxide (SO_2)	0.02	0.09
Volatile Organic Compounds (VOC)	0.19	0.80
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
See Attachment J, Table 5		
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
N_2O (4)	0.01	0.04
CH_4 (4)	0.10	0.42
CO_2 (4)	5353	22,275.37

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Natural Gas Combustion (7/1998).

(2) Emission factor taken from AP-42, Chapter 1.4, Natural Gas Combustion. PM10= Condensable, PM2.5 = Filterable.

(3) Emission factors were taken from an engineering source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville,

West Virginia facility in April 2003.

The emission factors are equal to the average of the test values plus two standard deviations.

(4) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Conditions
4.1.1., [45CSR §2-3.1., 45CSR16, 40CFR§60.43c(c)]
4.1.2., **[45CSR§2-9.1.]**
4.1.4., **[45CSR §2-9.2., 45CSR16, 40 CFR §60.11(d)]**
4.1.7., [45CSR13 – Permit R13-2192 §4.1.8.]
4.1.8. **[45CSR §10-3.8.]**
4.1.14., [45CSR13 – Permit R13-2192 §4.1.20
4.1.15., [45CSR34; 40 CFR §§63.11223(a) and (b)]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Conditions
4.2 Monitoring Requirements
4.2.2., **[45CSR §2-3.2. and 45CSR§30-5.1.c.]**
4.2.3 **[45CSR§30-5.1.c.]**

4.4 Recordkeeping Requirements
4.4.1., **[45CSR§30-5.1.c.]**
4.4.2., **[45CSR§2-8.3.c., 45CSR§2A-7.1., 40 CFR §60.48c(g), 45CSR16]**
4.4.4., [45CSR13 – Permit R13-2192 §4.3.11.]
4.4.5., [45CSR34; 40 CFR §§63.11225(c)(1), (c)(2), and (d)]

4.5 Reporting Requirements
4.5.1., **[45CSR §2-9.3.]**
4.5.4., **[40 CFR §60.48c(j), 45CSR16]**
4.5.5., [45CSR34; 40 CFR §§63.11225(b), (b)(1), and (b)(2)]

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Cyclones (C2, C3)

Particulate emissions from the cyclones are affected by the material throughput and the size distribution of the material. Hourly emissions are estimated based on the maximum hourly throughput for each cyclone. Annual emissions are based on the estimated quantity of residuals generated with a door skin production rate of 179,683,869 sqft/year – 1/8" basis. Because particulate size distribution data is not available, all particulate matter emitted has been conservatively assumed to be $PM_{2.5}$. Emissions from these cyclones are controlled by baghouse (BH3).

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C2	Recycle Cyclone	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

B&R Sheetmetal – 6 ft. diameter with an LC cone length, See enclosed process description.

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal	6 ft. diameter with LC cone length	

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
1370 lbs/hr	2570 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO_X)		
Lead (Pb)		
Particulate Matter ($PM_{2.5}$)		
Particulate Matter (PM_{10})		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.0 Source-Specific Requirements

5.1 Limitations and Standards
5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.1 Monitoring Requirements
5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements
3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C3	Waste Cyclone	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See attached description

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal	6 ft. diameter with LC cone length	

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
2975 lbs/hr	5632 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vented to a baghouse (E4), emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.0 Source-Specific Requirements

5.1 Limitations and Standards
5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.2 Monitoring Requirements
5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements
3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Middle Reject Cyclone (C4)

Particulate emissions from this cyclone are based on 5 percent maximum throughput of the reject screw. The middle reject cyclone is used for the metal detect juncture. When metal is detected in the blow line it kicks the material to the middle reject cyclone. Material from this cyclone is then blown to the fuel silos. The middle reject cyclone runs a maximum of 5 hours/day. Emissions from this cyclone are controlled by baghouse (BH3).

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C4	Middle Reject Cyclone	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See attached description

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal	6 ft. diameter with LC cone length	

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
1370 lbs/hr	2570 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating:	**Type and Btu/hr rating of burners:**

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Chip Cleaning Cyclone (C5)

The Chip Cleaning Cyclone serves a maintenance function. As needed, hogged reject door skins (chips) are diverted from the Skin Sizer Baghouse (BH4) and sent to the Chip Cleaning Cyclone. The chips are then stored in a holding bin and augered into the blender once or twice per day for use as a mechanical cleaning agent. Approximately 80 ft^3 of chips are used every 12 hours for cleaning. The cyclone operates as needed to maintain a full storage bin, probably 10 to 12 hours per day.

The Chip Cleaning Cyclone does not generate any particulate emissions not already accounted for elsewhere in this permit application. The cyclone is controlled by the Skin Sizer Baghouse, and material is simply diverted to the cyclone instead of being sent directly to the baghouse.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C5	Chip Cleaning Cyclone	BH4

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See attached description.

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal	6 ft. diameter with LC cone length	

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
2602 lbs/hr	1465 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Chip Cyclone (C6)

Particulate emissions from this cyclone are affected by material throughput from the furnish silos. Hourly emissions have been based on the maximum hourly throughput. Material is transferred from the furnish silos by chain conveyor to a blow line which brings the material to the cyclone. Materials from the cyclone are sent to the rotary valve. Emissions from this cyclone are controlled by baghouse (BH3).

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C6	Chip Cyclone	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See attached description.

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal		
Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
23,944 lbs/hr	47,504 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C7	Press Vent Baghouse Purge Cyclone	BH6, BH1a, BH1b, BH1c, & BF

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

B&R Sheetmetal cyclone

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal		

Construction date:	**Installation date:**	**Modification date(s):**
2013	2013	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
3.2 lbs/hr	8.5 ODT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C8	Dryer Baghouse Purge Cyclone	BH1a, BH1b,BH1c, Biofilter

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

B&R Sheetmetal cyclone

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal		
Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
302.4 lbs/hr	598.06 ODT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 8 & 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
CV1-CV5	Conveyors	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

CV1 – Truck Dump to Rotary Classifier
CV2 – Rotary Classifier to Metal Detector
CV3 – Metal Detector to Furnish Storage Silos
CV4 – Furnish Storage Silos to Refiner
CV5 – Fuel Storage Silos to the Boiler

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	None

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):
CV1 – 18.4 tons/hr; CV2 – 18.4 tons/hr; CV3 – 18.4 tons/hr; CV4 – 12.0 tons/hr; CV5 – 3.9 tons/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
39,303 BD-lbs/hr (total)	57,704 BDT/yr (total)	7884 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.25	.78
Particulate Matter (PM_{10})	1.66	5.12
Total Particulate Matter (TSP)	3.51	10.83
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 13.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

NA

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

NA

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Fiber Dryer and Dryer Cyclone Description

The fiber dryer is a tube dryer manufactured by Westec America. Heat is provided by both steam coils and the direct firing of natural gas; each source is expected to provide about 50% of the heat input to the dryer. The natural gas burner is rated at 20 MMBtu/hr, but it is anticipated that it will normally be operated at about 50% of capacity. Dryer intake air includes the exhaust from the Press (PV) and the Rotary Valve (RV). The wood fiber exiting the dryer is separated from the air stream by the dryer cyclone and is then stored in the doffing roll bin.

Emissions from the dryer, and press are exhausted through the dryer cyclone. These emissions include VOC and HAP volatilized from the wood, natural gas combustion products, and particulate material from the fiber. Three Fiber Dryer Baghouses (BH1a, BH1b, and BH1c) control particulate emissions from the dryer cyclone. The exhaust from the three baghouses is vented into the Biofilter (BF) to control HAP emissions.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
D1/C1	Fiber Dryer and Dryer Cyclone	BH1a, BH1b, BH1c, BF

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description

Manufacturer:	**Model number:**	**Serial number:**
Dryer: Westec America Cyclone: B&R Sheetmetal	54 inch diameter x 270 feet long 10 ft. diameter x 20 ft. cone length	
Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):
20MMBtu/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
21,591 BD-lbs/hr	47,500 BDT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: 8,322 hrs/yr	**Type and Btu/hr rating of burners:** 20 MMBtu/hr Maxon RG-IV air flow burner

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.
Natural Gas – 20 MMBtu/hr, 166,440 MMBtu/yr.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	0.022 gr/100 ft^3	0%	1077

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----(1)	----(1)
Nitrogen Oxides (NO_X)	----(1)	----(1)
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----(1)	----(1)
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
N_2O	----(1)	----(1)
CH_3	----(1)	----(1)
CO_2	----(1)	----(1)

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 7, Cyclone is controlled by the Dryer Baghouses (BH1a, BH1b, BH1c) and be vented to the Biofilter (BF).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.2., **[45CSR13 – Permit R13-2192 §4.1.2.]**
5.1.8., [45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]
5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.16., **[45CSR §7-3.7.]**
5.1.18., **[45CSR §7-4.12.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Die Coating Process (DB)

The die coating process will include five basic steps as follows:

Step 1. Wipe the surface of each die half with a caustic cleaner/degreaser and rags.

Step 2. Media blast the surface of each steel die half in an enclosed booth using re-circulated air with no vent to atmosphere.

Step 3. Wipe the surface of each die half surface clean with isopropyl alcohol and rags.

Step 4. Apply a surface coating to each die half using a HVLP paint gun in the new die coating paint booth vented to atmosphere (E17).

Step 5. Place each die half on a hot plate to cure the surface coating.

The entire process takes a minimum of ½ hour to complete on each die half. The surface coating on each die is allowed to dry completely before installing the die in the door skin press.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
DB	Die Coating	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See Enclosed Process Description

Manufacturer:	**Model number:**	**Serial number:**
TBD	TBD	
Construction date:	**Installation date:**	**Modification date(s):**
TBD	TBD	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
0.1 gal coating/hr	97 gal coating /yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.01	0.01
Particulate Matter (PM_{10})	0.01	0.01
Total Particulate Matter (TSP)	0.01	0.01
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	2.32	1.2
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Methanol	0.13	0.06
Diethylene glycol monbutyl	0.13	0.07
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

(1) See Attachment J, Table 16

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.12 [45CSR13 – Permit R13-2192 §4.1.14.]

5.1.14[45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]

5.1.15 [45CSR §7-3.1.]

5.1.16 [45CSR §7-3.7.]

5.1.18. [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.2. **[45CSR13 – Permit R13-2192 §4.3.8.]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. [45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]

5.4.2 [45CSR13 – Permit R13-2192 §4.3.2.]

5.4.3 [45CSR13 – Permit R13-2192 §4.3.3.]

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of the Coating Manufacturing Process (CM)

The facility manufactures water-based primer used to prime door skins at Wood Fiber Division – West Virginia and other wood products at a number of JELD-WEN, inc. door manufacturing facilities. The primer is made by mixing water-based acrylic latex with a multiple additives and water. The maximum product usage and associated emissions are summarized in Attachment N, Supporting Emission Calculations.

During the pigment addition process, the dispenser is not operated in order to minimize any potential particulate emissions. A dust collector is positioned adjacent to the lid opening to draw any particulate that becomes suspended during the addition of the powder. Once the ingredients are added, the vacuum hose is attached to the opening in the lid to collect any material suspended during the dispersion process. The particulate matter collected by the dust collector is reused in subsequent batches. Emissions from the dust collector are vented inside the building.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
CM	Coating Manufacturing	BH5

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See Enclosed Process Description

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	

Construction date:	**Installation date:**	**Modification date(s):**
1999	04/01/1999	**NA**

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

NA

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
1 batch/6 hours	600 batches /yr	3600 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.01	0.02
Particulate Matter (PM_{10})	0.01	0.02
Total Particulate Matter (TSP)	0.01	0.02
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	0.50	0.91
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Glycol Ether	0.321	0.58
Formaldehyde	0.0003	0.001
Styrene	0.001	0.002
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

(1) See Attachment J, Table 14, Table 15

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.11 [45CSR13 – Permit R13-2192 §4.1.13.; 45CSR§7-4.1]
5.1.14 [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15 [45CSR §7-3.1.
5.1.16 [45CSR §7-3.7.]
5.1.18 [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.1 **[45CSR13 – Permit R13-2192 §4.3.7.]**
5.2.6 45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7 [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. [45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]
5.4.2. [45CSR13 – Permit R13-2192 §4.3.2.]
5.4.3. [45CSR13 – Permit R13-2192 §4.3.3.]
5.4.7. [45CSR§30-5.1.c, 40 CFR §64.9(b)]

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Fiberline Prior to the Press (FL(a))

Particulate, VOC, and HAP emissions generated by the operation are included in the affected source FL(a). Particulate material generated by the shave-off and trimming operation is captured by hoods and conveyed to the Middle Reject Cyclone (C4), which is used to recycle material back into the process. Although the particulate material originates from FL(a), all particulate emissions are accounted for on the affected source sheet for C4. Particulate emissions from C4 are controlled by the Waste Baghouse (BH3).

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FLa	Fiber Line Prior to Press (Former)	BH2 & BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
BH2: 907 lbs/hr BH3: 366 lbs/hr	BH2: 1,753 ODT/yr BH3: 692 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.91	1.75
Particulate Matter (PM_{10})	0.91	1.75
Total Particulate Matter (TSP)	0.91	1.75
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	0.21	.85
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Formaldehyde	0.08	0.31
Methanol	0.13	0.54
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Tables 9 & 10.

(2) Emissions from FLa eventually vent to atmosphere through the Former Baghouse (BH2) and the Waste Baghouse (BH3). Emissions listed here are for the former Baghouse only. The Waste Baghouse emissions are accounted for by other emission units.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.16., **[45CSR §7-3.7.]**
5.1.18 [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. [45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.2]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Fiberline After Press (FL(b))

After the door skins exit the press, reject skins are chipped in an electric hog. The hogged material is pneumatically conveyed to the Sizer Baghouse (BH4). The rest of the skins continue to the unsized skin storage area prior to being cut to the final dimensions by the skin sizer saws. Particulate material generated by the sizing operation are captured by hoods and conveyed to BH4. The trim from the sizing operation is hogged and pneumatically conveyed to BH4.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FLb	Fiber Dryer After the Press (Sizer)	BH4

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

12,222 lbs/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
BH4: 12,222 lbs/hr	BH4: 8,444 ODT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	6.11	4.22
Particulate Matter (PM_{10})	6.11	4.22
Total Particulate Matter (TSP)	6.11	4.22
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	0.23	0.16
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Formaldehyde	0.23	0.16
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Tables 9 & 10.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.16., **[45CSR §7-3.7.]**
5.1.18 [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. [45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.2]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FLSN	North Fuel Storage Silo	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The North Fuel Storage Silo emission unit collects and stores wood fuel from the truck dump and door skin manufacturing operation for the wood-fired boiler.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

28,740 ft^3

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
7,805 BD-lbs/hr (combined)	32,475 BDT/yr (combined)	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

(1) Emissions are controlled by BH3 (E4)

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.3. [45CSR30-5.1.c., 40CFR§64.6(c)]
5.2.4. [45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]
5.2.7 [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**
5.3.2. [45CSR13 – Permit R13-2192 §4.2.1.]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.7. **[45CSR§30-5.1.c , 40 CFR §64.9(b)]**

5.5 Reporting Requirements

5.5.1. **[45CSR§30-5.1.c , 40 CFR §64.9(a)]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FLSS	South Fuel Storage Silo	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The South Fuel Storage Silo emission unit collects and stores wood fuel from the truck dump and door skin manufacturing operation for the wood-fired boiler.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

28,740 ft^3

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
7,805 BD-lbs/hr (combined)	32,475 BDT/yr (combined)	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) Emissions are controlled by BH (E4) .

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.3. [45CSR30-5.1.c., 40CFR§64.6(c)]
5.2.4. [45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]
5.2.7 [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**
5.3.2. [45CSR13 – Permit R13-2192 §4.2.1.]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.7. **[45CSR§30-5.1.c , 40 CFR §64.9(b)]**

5.5 Reporting Requirements

5.5.1. **[45CSR§30-5.1.c , 40 CFR §64.9(a)]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FSE	East Furnish Storage Silo	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The East Furnish Storage Silo stores furnish from the truck dump until it is used in the door skin manufacturing operation.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

46,563 ft^3

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
18,359 BD-lbs/hr	23,757 BDT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.39	0.5
Particulate Matter (PM_{10})	0.39	0.5
Total Particulate Matter (TSP)	1.56	2.0
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 6.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

5.2 Monitoring Requirements

5.2.7., [45CSR§30-5.1.c., 40CFR§64.7(e)]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.7. **[45CSR§30-5.1.c , 40 CFR §64.9(b)]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FSW	West Furnish Storage Silo	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The West Furnish Storage Silo stores furnish from the truck dump until it is used in the door skin manufacturing operation.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

46,563 ft^3

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
18,359 BD-lbs/hr	23,757 BDT/yr	7884 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.39	0.50
Particulate Matter (PM_{10})	0.39	0.50
Total Particulate Matter (TSP)	1.56	2.0
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 6.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

5.2 Monitoring Requirements

5.2.7., [45CSR§30-5.1.c., 40CFR§64.7(e)]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.7. **[45CSR§30-5.1.c , 40 CFR §64.9(b)]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Primeline Description

The doorskins are primed with a waterborne primer with a VOC content less than or equal to 0.3 lbs/gal. The primeline will consist of three ovens and a paint booth. The first oven, located upstream of the paint booth, will pre-heat the door skins. This oven is heated by gas-fired infrared elements with a total rated capacity of 1.4 MMBtu/hr. The second oven, located just downstream of the paint booth, is a steam-heated high-velocity convection oven, which will drive off the volatile components of the paint. The third oven will complete the curing of the paint. The third oven is heated by gas-fired infrared elements with a total rated capacity of 2.4 MMBtu/hr.

The primer will be applied using automatic spray guns. The primer will be reduced slightly with water to obtain the proper viscosity for spraying. Because the primer is waterborne, organic solvents will not be used either for thinning or for clean-up.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
PL	Primeline	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description

Manufacturer:	**Model number:**	**Serial number:**
George Koch Sons (ovens)	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

1.4 MMBtu/hr (1st oven); 2.4 MMBtu/hr (3rd oven)

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
71 gallons primer/hr	534,560 gallons primer/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: 3.8 MMBtu/hr	**Type and Btu/hr rating of burners:** 1.4 MMBtu/hr (1st oven); 2.4 MMBtu/hr (3rd oven)

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas – 3.8 MMBtu/hr, 31,624 MMBtu/yr.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	0.022 gr/100 ft^3	0%	1,077

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.30	1.23
Nitrogen Oxides (NO_X)	0.35	1.47
Lead (Pb)	Insignificant(2)	Insignificant(2)
Particulate Matter ($PM_{2.5}$)	0.01	0.03
Particulate Matter (PM_{10})	0.02	0.08
Total Particulate Matter (TSP)	0.03	0.11
Sulfur Dioxide (SO_2)	0.002	0.01
Volatile Organic Compounds (VOC)(1)	21.31	80.18
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	----(2)	----(2)
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
N_2O	Insignificant(2)	Insignificant(2)
CH_4	0.01	0.04
CO_2	540	2245

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) VOC emissions are combined total from E13, & E14.
(2) See Attachment J, Tables 11a, 11b, & 12

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.5., **[45CSR13 – Permit R13-2192 §4.1.5]**
5.1.9., [45CSR13 – Permit R13-2192 §4.1.11.; 45CSR§7-4.1]
5.1.10., [45CSR13 – Permit R13-2192 §4.1.12.; 45CSR§7-4.1]
5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.16., **[45CSR §7-3.7.]**
5.1.17**.,** [45CSR §7-4.12.]
5.1.18**.,** [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.5., [45CSR§30-5.1.c., 40CFR§64.7(b)]
5.2.7., [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of the Fiber Line Press (PV)

Fiber mats are conveyed off of the Fiber Line, stacked into a loader, and loaded into a steam heated eight-opening press. The press contains steel dies with the desired door skin patterns in relief. Once all of the platens of the press are full, the press consolidates the resinated fiber under heat and pressure. The door skins are pressed until the resin has cured. The press opens and the door skins are unloaded.

Air emissions from the press are captured in a permanent total enclosure meeting the requirements of EPA Method 204 and exhausted to the Press Vent Baghouse (BH6) to control Particulate emissions. The Baghouse (BH6) exhaust is vented into the Fiber Dryer (D1) intake. The Fiber Dryer (D1) is exhausted to the Dryer Cyclone (C1) and then to three Fiber Dryer Baghouses (BH1a, BH1b, & BH1c) to control Particulate emissions from the Dryer (D1). The exhaust from the three Fiber Dryer Baghouses (BH1a, BH1b, & BH1c) is vented into the Biofilter (BF).

Potential press emissions are calculated using the maximum hourly and annual press throughput (21,591 ft2/hr and 179,683,869 ft2/yr – 1/8" basis) multiplied by the emission factors based on source testing conducted on the uncontrolled emission source and the Biofilter (BF) control efficiency provided by the manufacturer.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
PV	Press Vents	BH6, BH1a, BH1b, BH1c, BF

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Steam heated 5ft x8ft, eight-opening press used to consolidate wood fiber mats.

See attached process description

Manufacturer:	**Model number:**	**Serial number:**
COE Manufacturing	Steam heated eight-opening press	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

23,942 lbs/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
21,591 ft2/hr – 1/8" basis	179,683,869 ft2/hr – 1/8" basis	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----(1)	----(1)
Nitrogen Oxides (NO_X)	----(1)	----(1)
Lead (Pb)	----(1)	----(1)
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----(1)	----(1)
Volatile Organic Compounds (VOC)	----(1)	----(1)
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	----(1)	----(1)
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Tables 7&9 Press is controlled by the Press Vent Baghouse (B6), Dryer Baghouses (BH1a, BH1b, BH1c) and Biofilter (BF).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.3., **[45CSR13 – Permit R13-2192 §4.1.3.]**
5.1.6., [45CSR13 – Permit R13-2192 §4.1.6.; 45CSR§7-4.1]
5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., 45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.5., [45CSR§30-5.1.c., 40CFR§64.7(b)]
5.2.6., [45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7., [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.3 Testing Requirements

5.3.1., **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1., **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2., **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3., **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.5., **[45CSR13 – Permit R13-2192 §4.3.5.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
RS	Rotary Classifier	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The rotary classifier removes large pieces of wood furnish from green wood chips prior to the conveyor to the furnish storage silos

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** None

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):
40 tons/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
19.65 tons/hr (total)	154,931 tons/yr (total)	7884 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	Insignificant	Insignificant
Particulate Matter (PM_{10})	Insignificant	Insignificant
Total Particulate Matter (TSP)	Insignificant	Insignificant
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

Emissions are believed to be insignificant.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

NA

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

NA

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
RV	Rotary Valve	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Rotary valve is associated with the wood chip refining process.

Manufacturer:	**Model number:**	**Serial number:**
Unknown		

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
23,944 OD- lbs/hr	47,504 ODT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.59	1.16
Particulate Matter (PM_{10})	0.59	1.16
Total Particulate Matter (TSP)	2.35	4.66
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	0.81	1.60
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Total HAP	0.54(1)	1.07(1)
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) For individual HAP See Attachment J, Table 8.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.7., [45CSR13 – Permit R13-2192 §4.1.9.; 45CSR§7-4.1]
5.1.15 **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

5.2 Monitoring Requirements

5.2.6., [45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7., 45CSR§30-5.1.c., 40CFR§64.7(e)]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1., **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.3., **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of the Truck Dump (TD)

The Truck Dump is a receiving bin for wet green poplar chips used in the door skin manufacturing process and wood residuals for combustion in the Hogged Fuel-Fired Boiler (B1) with a total maximum hourly throughput of 36,718 BD lbs/hr. Fugitive particulate emissions from the Truck Dump (TD) are estimated based on a particle size analysis of plytrim from a similar source multiplied by the potential hourly and annual material throughput.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
TD	Truck Dump	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

NA

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
39,303 BD-lbs/hr (combined)	57,704 BDT/yr (combined)	7884 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	1.56	4.5
Particulate Matter (PM_{10})	1.56	4.5
Total Particulate Matter (TSP)	6.24	8.9
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	Insignificant	Insignificant
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	Insignificant	Insignificant
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 6.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.15 **[45CSR §7-3.1.]**

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

NA

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Thu, Jan 25, 2024 at 1:11 PM
To: Sarah K Barron <sarah.k.barron@wv.gov>
Cc: Jay Borrell <Jborrell@jeldwen.com>, Eric Rapp <ERapp@jeldwen.com>

Hi Sarah,

Thank you for taking time yesterday to discuss the CAM and throughput aspects.

Per our discussion, we've revised the Attachment G forms for Baghouses 2-4 and have attached for your reference. The revisions include identifying the CAM applicability and the rationale addressing why the units are not subject to CAM. For baghouses BH1a-c and the biofilter, those remain unchanged at this time and will be discussed in the proposed meeting.

Regarding the throughput changes, we will be revising the referenced equipment and associated capacities to reflect the prior throughput/capacities. We will not pursue any modification(s) provide the updated forms in a separate email next week.

Should you have any questions let us know.

Thank you,

Randy Taylor, ASP | Supervisor Health and Safety

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

CRAG AIR PMT 2024-01 Att G BH2 BH3 BH4.pdf
153K

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH2 (Former Baghouse)	**List all emission units associated with this control device.** Fiber line prior to the press (FLa)	
Manufacturer: Clarkes' Sheet Metal	**Model number:** P38-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.90%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 2,527 SF total cloth area
- 9.14:1 ft/min operating air to cloth ratio
- Average ACFM: 23,100 @ 160^{o}F
- Continuous operation

Is this device subject to the CAM requirements of 40 C.F.R. 64? __ Yes _X_ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

The Former Baghouse does not meet the definition of control device found in 40 C.F.R. 64.1 as it would be considered inherent process equipment because it is primarily used for pneumatic material transfer and recovery (fuel for the boiler). Therefore, the baghouse would not be subject to CAM.

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform monthly visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH3	**List all emission units associated with this control device.** Fiber line prior to the press (FLa), North Fuel Storage Silo (FLSN), South Fuel Storage Silo (FLSS), C2, C3, C4, C6	
Manufacturer: Clarkes' Sheet Metal	**Model number:** 1-100-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.90%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 6,451 SF total cloth area
- 6.97:1 ft/min operating air to cloth ratio
- Average ACFM: 34,000 @ 160^{o}F
- Continuous operation

Is this device subject to the CAM requirements of 40 C.F.R. 64? __ Yes _X_ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

The Main Waste Baghouse does not meet the definition of control device found in 40 C.F.R. 64.1 as it would be considered inherent process equipment because it is primarily used for pneumatic material transfer and recovery (fuel for the boiler). Therefore, the baghouse would not be subject to CAM.

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform monthly visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH4 (Sizer Baghouse)	**List all emission units associated with this control device.** Fiber line after the press (FLb), Chip Cleaning Cyclone (C5)	
Manufacturer: Clarkes' Sheet Metal	**Model number:** P57-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.95%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 4,548 SF total cloth area
- 7.03:1 ft/min operating air to cloth ratio
- Average ACFM: 32,000 @ 160^{o}F
- Continuous operation

Is this device subject to the CAM requirements of 40 C.F.R. 64? __ Yes _X_ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

The Sizer Baghouse does not meet the definition of control device found in 40 C.F.R. 64.1 as it would be considered inherent process equipment because it is primarily used for pneumatic material transfer and recovery (fuel for the boiler). Therefore, the baghouse would not be subject to CAM.

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform monthly visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Mon, Jan 22, 2024 at 10:00 AM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Thank you, speak to you on Wednesday.

Randy Taylor, ASP | Supervisor Health and Safety

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Monday, January 22, 2024 8:33 AM
[Quoted text hidden]

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Mon, Jan 22, 2024 at 8:33 AM
To: Randy Taylor <RTaylor@jeldwen.com>

Wednesday at 2:00 PM works for me.

Thanks,
- Sarah
[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Mon, Jan 22, 2024 at 8:20 AM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Hey Sara,
Can you do Wednesday at 2pm, our calendar in full Monday and Tuesday. Eric Rapp would also like to be apart of the call, he's helped me with our permit renewal since it's my first time submitting.
Thank you,

Randy Taylor, ASP | Supervisor Health and Safety

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Monday, January 22, 2024 7:29 AM
To: Randy Taylor <RTaylor@jeldwen.com>
Subject: Re: Fw: Title V Permit - Request for Information - Application No. R30-06700095-2024

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Mon, Jan 22, 2024 at 7:29 AM
To: Randy Taylor <RTaylor@jeldwen.com>

Hi, Randy.

I'm sorry that I missed your previous calls. I should be available to speak anytime before 2:00 PM today and anytime before 5:00 PM tomorrow.

Thanks,
- Sarah
[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Fri, Jan 19, 2024 at 11:49 AM
To: Sarah K Barron <sarah.k.barron@wv.gov>

Good afternoon Sarah,

Would you have time next week to discuss some of the questions you have on our renewal application?

If so what day and time works best for you?

Thank you

Randy Taylor, ASP | Supervisor Health and Safety

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Thursday, January 11, 2024 9:07 AM
To: Randy Taylor <rtaylor@jeldwen.com>
Subject: Title V Permit - Request for Information - Application No. R30-06700095-2024

Hello, Randy.
[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Fri, Jan 12, 2024 at 8:11 AM
To: Sarah K Barron <sarah.k.barron@wv.gov>

Good morning Sarah,
I'll review your questions and submit a response as soon as possible. If I have questions I'll give you a call to discuss.
Thank you,

Randy Taylor, ASP | Supervisor Health and Safety

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Thursday, January 11, 2024 9:07 AM
To: Randy Taylor <rtaylor@jeldwen.com>
Subject: Title V Permit - Request for Information - Application No. R30-06700095-2024

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit - Request for Information - Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Thu, Jan 11, 2024 at 9:07 AM
To: rtaylor@jeldwen.com

Hello, Randy.

I have several questions for you about the Title V permit renewal application for JELD-WEN, Inc.'s Craigsville Facility.

1. While reviewing the application, I noticed the cover letter mentions the Attachment G: Air Pollution Control Device Forms have been updated to reflect the CAM applicability appropriately. Could you provide some more information about this? What specifically are the changes to the applicability of CAM?

Please also send the following related information and forms which were missing from the renewal application:

- The CAM applicability and justification sections were left blank in the Attachment G: Air Pollution Control Device Forms for the baghouses BH1a, BH1b, BH1c, BH2, BH3, BH4, and BH6. If any information in these forms has changed compared to the 2019 renewal application, please let me know the reason for the changes.
- Under the current operating permit, the baghouses BH1a, BH1b, BH1c, BH2, BH3, and BH4 are subject to CAM requirements. However, in the renewal application, the Attachment H: CAM Plan forms were not included for these control devices and the associated emission units.
- The Attachment G: Air Pollution Control Device Form for the Biofilter (BF) was not included in this renewal application. Additionally, due to the reclassification of the facility to area source status for HAPs under R13-2192Q and R30-06700095-2019, the biofilter and associated emission units are no longer subject to 40 C.F.R. Part 63 Subpart DDDD, and the CAM exemption of 40 C.F.R. 64.2(b)(1)(i) no longer applies. Therefore, please also provide an update to the CAM applicability and justification section of the biofilter's control device form.

2. When comparing the 2024 renewal application to the current active Title V permit (R30-06700095-2019 (MM01)) and NSR permit (R13-2192R), there are several inconsistencies among the reported design capacities and/or throughputs of various emission units. I looked back at the Attachment E: Emission Unit Forms submitted in the 2019 renewal application and noticed that the design capacities/throughputs of the emission units listed below have increased in this renewal application.

Emission Unit	Description
B1	Hogged Fuel-Fired Boiler
B2	Natural Gas-Fired Boiler
C3	Waste Cyclone
C4	Middle Reject Cyclone
C6	Chip Cyclone
C7	Press Vent Baghouse Purge Cyclone
C8	Dryer Baghouse Purge Cyclone
D1/C1	Fiber Dryer and Dryer Cyclone
FLa (BH2 and BH3)	Fiber Line Prior to Press (Former)
FLb (BH4)	Fiber Dryer after Press (Sizer)
FLSN	North Fuel Storage Silo
FLSS	South Fuel Storage Silo
PL	Primeline
PV	Press Vents
RS	Rotary Classifier
RV	Rotary Valve
TD	Truck Dump

Additionally, for some of these units the throughput that was reported in this application exceeds a limit for the maximum throughput or results in the potential emissions exceeding the emission limits set in the current permits. For instance, in Attachment E of this renewal application, the hogged fuel-fired boiler (B1) was reported to have an annual heat input of 546,131 mmBTU/yr and this was used to calculate the annual potential emissions in Attachment I: Supporting Emission Calculations. However, this throughput both exceeds the annual heat input limit of 520,125 mmBTU/yr (established in Condition 4.1.13. of the current Title V permit) and causes the annual potential emissions of the boiler to be greater than the emission limits (established in Condition 4.1.6. of the current Title V permit).

Are these changes accurate? If so, has a permit determination been completed or do you plan to submit a revision application for the facility's NSR and Title V permits to incorporate these changes?

Please, let me know if you would like to discuss these topics further or if you have any questions.

Thanks,
- Sarah

--
Sarah Barron
Technical Analyst Trainee
West Virginia Department of Environmental Protection
Division of Air Quality
(304) 926-0499 ext. 41915
sarah.k.barron@wv.gov

Barron, Sarah K <sarah.k.barron@wv.gov>

Completeness Determination, Craigsville Facility, Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Mon, Nov 27, 2023 at 8:15 AM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>

Received,
Thank you,

Randy Taylor, ASP | Supervisor Health and Safety

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Monday, November 27, 2023 7:56 AM
To: Randy Taylor <rtaylor@jeldwen.com>
Subject: Completeness Determination, Craigsville Facility, Application No. R30-06700095-2024

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Read: Completeness Determination, Craigsville Facility, Application No. R30-06700095-2024

Randy Taylor <RTaylor@jeldwen.com> Mon, Nov 27, 2023 at 8:13 AM
To: "sarah.k.barron@wv.gov" <sarah.k.barron@wv.gov>

Your message

To: Randy Taylor
Subject: Completeness Determination, Craigsville Facility, Application No. R30-06700095-2024
Sent: Monday, November 27, 2023 7:56:49 AM (UTC-05:00) Eastern Time (US & Canada)

was read on Monday, November 27, 2023 8:13:52 AM (UTC-05:00) Eastern Time (US & Canada).

Barron, Sarah K <sarah.k.barron@wv.gov>

Completeness Determination, Craigsville Facility, Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Mon, Nov 27, 2023 at 7:56 AM
To: rtaylor@jeldwen.com

Your Title V renewal application for a permit to operate the above referenced facility was received by this Division on November 16, 2023. After review of said application, it has been determined that the application is administratively complete as submitted. Therefore, the above referenced facility qualifies for an Application Shield.

The applicant has the duty to supplement or correct the application. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a draft permit.

The submittal of a complete application shall not affect the requirement that any source have all **preconstruction permits** required under the rules of the Division.

If during the processing of this application it is determined that additional information is necessary to evaluate or take final action on this application, a request for such information will be made in writing with a reasonable deadline for a response. Until which time as your renewal permit is issued or denied, please continue to operate this facility in accordance with 45CSR30, section 6.3.c. which states: *If the Secretary fails to take final action to deny or approve a timely and complete permit application before the end of the term of the previous permit, the permit shall not expire until the renewal permit has been issued or denied, and any permit shield granted for the permit shall continue in effect during that time.* This protection shall cease to apply if, subsequent to the completeness determination made pursuant to paragraph 6.1.d. of 45CSR30 and as required by paragraph 4.1.b., the applicant fails to submit by the deadline specified in writing any additional information identified as being needed to process the application.

Please remember, **failure of the applicant to timely submit information required or requested to process the application may cause the Application Shield to be revoked.** Should you have any questions regarding this determination, please contact me.

Sincerely,

Sarah Barron

--
Sarah Barron
Technical Analyst Trainee
West Virginia Department of Environmental Protection
Division of Air Quality
(304) 926-0499 ext. 41915
sarah.k.barron@wv.gov

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit Application - Email for Environmental Contact

Randy Taylor <RTaylor@jeldwen.com> Wed, Nov 22, 2023 at 7:07 AM
To: "sarah.k.barron@wv.gov" <sarah.k.barron@wv.gov>

Good morning Sarah,
Can you resend the completeness determination and I'll check to see if I have a problem with my email.
Thank you,

Randy Taylor, ASP | Supervisor Health and Safety

JELD-WEN | Fiber West Virginia
500 JELD-WEN Road
Craigsville, WV 26205
Office: 304-742-5180 ext. 18
Mobile: 304-651-3550
Email: rtaylor@jeldwen.com

From: Jay Borrell <Jborrell@jeldwen.com>
Sent: Tuesday, November 21, 2023 12:13 PM
To: Barron, Sarah K <sarah.k.barron@wv.gov>
Cc: Randy Taylor <RTaylor@jeldwen.com>
Subject: RE: Title V Permit Application - Email for Environmental Contact

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit Application - Email for Environmental Contact

Jay Borrell <Jborrell@jeldwen.com> Tue, Nov 21, 2023 at 12:13 PM
To: "Barron, Sarah K" <sarah.k.barron@wv.gov>
Cc: Randy Taylor <RTaylor@jeldwen.com>

That is correct rtaylor@jeldwen.com

JAY BORRELL | PLANT MANAGER

JELD-WEN | Fiber West Virginia

500 JELD-WEN Road

Craigsville, WV 26205

Office: 304-742-5180

Mobile: 304-619-3510

Email: jborrell@jeldwen.com

From: Barron, Sarah K <sarah.k.barron@wv.gov>
Sent: Tuesday, November 21, 2023 11:19 AM
To: Jay Borrell <jborrell@jeldwen.com>
Subject: Title V Permit Application - Email for Environmental Contact

[Quoted text hidden]

Barron, Sarah K <sarah.k.barron@wv.gov>

Title V Permit Application - Email for Environmental Contact

Barron, Sarah K <sarah.k.barron@wv.gov> Tue, Nov 21, 2023 at 11:19 AM
To: jborrell@jeldwen.com

Jay Borrell,

Hello. Yesterday (November 20, 2023), I sent the email with the completeness determination for the Craigsville Facility's Title V permit renewal application to both you and Randy Taylor. After sending the message, however, I received an automatic response saying that delivery of the message to Randy had failed. Could you please confirm that Randy's email address is correct or let me know if there may be another issue? The email address in the permit application was rtaylor@jeldwen.com.

Thanks for your help,
- Sarah

--
Sarah Barron
Technical Analyst Trainee
West Virginia Department of Environmental Protection
Division of Air Quality
(304) 926-0499 ext. 41915
sarah.k.barron@wv.gov

Barron, Sarah K <sarah.k.barron@wv.gov>

Read: Completeness Determination, Craigsville Facility, Application No. R30-06700095-2024

Jay Borrell <Jborrell@jeldwen.com> Mon, Nov 20, 2023 at 10:00 AM
To: "sarah.k.barron@wv.gov" <sarah.k.barron@wv.gov>

Your message

To: Jay Borrell
Subject: Completeness Determination, Craigsville Facility, Application No. R30-06700095-2024
Sent: Monday, November 20, 2023 9:41:18 AM (UTC-05:00) Eastern Time (US & Canada)

was read on Monday, November 20, 2023 10:00:29 AM (UTC-05:00) Eastern Time (US & Canada).

Barron, Sarah K <sarah.k.barron@wv.gov>

Completeness Determination, Craigsville Facility, Application No. R30-06700095-2024

Barron, Sarah K <sarah.k.barron@wv.gov> Mon, Nov 20, 2023 at 9:41 AM
To: jborrell@jeldwen.com, rtaylor@jeldwen.com

Your Title V renewal application for a permit to operate the above referenced facility was received by this Division on November 16, 2023. After review of said application, it has been determined that the application is administratively complete as submitted. Therefore, the above referenced facility qualifies for an Application Shield.

The applicant has the duty to supplement or correct the application. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a draft permit.

The submittal of a complete application shall not affect the requirement that any source have all **preconstruction permits** required under the rules of the Division.

If during the processing of this application it is determined that additional information is necessary to evaluate or take final action on this application, a request for such information will be made in writing with a reasonable deadline for a response. Until which time as your renewal permit is issued or denied, please continue to operate this facility in accordance with 45CSR30, section 6.3.c. which states: *If the Secretary fails to take final action to deny or approve a timely and complete permit application before the end of the term of the previous permit, the permit shall not expire until the renewal permit has been issued or denied, and any permit shield granted for the permit shall continue in effect during that time.* This protection shall cease to apply if, subsequent to the completeness determination made pursuant to paragraph 6.1.d. of 45CSR30 and as required by paragraph 4.1.b., the applicant fails to submit by the deadline specified in writing any additional information identified as being needed to process the application.

Please remember, **failure of the applicant to timely submit information required or requested to process the application may cause the Application Shield to be revoked.** Should you have any questions regarding this determination, please contact me.

Sincerely,

Sarah Barron

--
Sarah Barron
Technical Analyst Trainee
West Virginia Department of Environmental Protection
Division of Air Quality
(304) 926-0499 ext. 41915
sarah.k.barron@wv.gov

Received
November 16, 2023
WV DEP/Div of Air Quality

Division of Air Quality Permit Application Submittal

Please find attached a permit application for : JELD-WEN, Craigsville, WV
[Company Name; Facility Location]

- DAQ Facility ID (for existing facilities only): 067-00095
- Current 45CSR13 and 45CSR30 (Title V) permits associated with this process (for existing facilities only): R30-06700095-2019(MM01) & R13-2192R

- Type of NSR Application (check all that apply):
  - ☐ Construction
  - ☐ Modification
  - ☐ Class I Administrative Update
  - ☐ Class II Administrative Update
  - ☐ Relocation
  - ☐ Temporary
  - ☐ Permit Determination

- Type of 45CSR30 (TITLE V) Application:
  - ☐ Title V Initial
  - ☑ Title V Renewal
  - ☐ Administrative Amendment**
  - ☐ Minor Modification**
  - ☐ Significant Modification**
  - ☐ Off Permit Change

****If the box above is checked, include the Title V revision information as ATTACHMENT S to the combined NSR/Title V application.**

- Payment Type:
  - ☑ Credit Card (Instructions to pay by credit card will be sent in the Application Status email.)
  - ☐ Check (Make checks payable to: WVDEP – Division of Air Quality)
    Mail checks to:
    WVDEP – DAQ – Permitting
    Attn: NSR Permitting Secretary
    601 57th Street, SE
    Charleston, WV 25304

Please wait until DAQ emails you the Facility ID Number and Permit Application Number. Please add these identifiers to your check or cover letter with your check.

- If the permit writer has any questions, please contact (all that apply):
  - ☑ Responsible Official/Authorized Representative
    - Name: Jay Borrell
    - Email: jborrell@jeldwen.com
    - Phone Number: 304-742-5180
  - ☑ Company Contact
    - Name: Randy Taylor
    - Email: rtaylor@jeldwen.com
    - Phone Number: 304-742-5180
  - ☐ Consultant
    - Name:
    - Email:
    - Phone Number:

JELD-WEN WINDOWS & DOORS

Via Email

11/17/2023

Ms. Laura Crowder, Director
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th St.
Charleston, WV 25304-2943

Re: Title V Renewal Application R30-06700095

Dear Ms. Crowder:

On behalf of JELD-WEN, Inc. the Title V renewal application associated with Title V Operating Permit: R30-006700095-2019 (MM01) and associated NSR permit R13-2192R for your review.

With the renewal application JELD-WEN, Inc. is also requesting revisions to the Emission Unit IDs assigned to the following emission units.

Current	Proposed
• DC – Die Cleaning Operation	No Change
• DC – Die Coating	DB – Die Coating
• DC – Coating Manufacturing	CM – Coatings Manufacturing

These revisions are requested to promote a consistent identification structure and better align with the recently approved minor modification associated with the Coatings Manufacturing emission unit. Additionally, the Attachment G forms have been updated to reflect the CAM applicability appropriately.

Should you any questions regarding this submittal please contact me at (304) 742-5180.

Respectfully submitted,

JELD-WEN, Inc.

Randy Taylor

Randy Taylor
EHS Manager

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0475
www.dep.wv.gov/daq

INITIAL/RENEWAL TITLE V PERMIT APPLICATION - GENERAL FORMS

Section 1: General Information

1. **Name of Applicant (As registered with the WV Secretary of State's Office):**
JELD-WEN, Inc.
DBA JELD-WEN Fiber of West Virginia

2. Facility Name or Location:
500 JELD-WEN Road
Craigsville, WV 26205

3. DAQ Plant ID No.:
067-00095

4. Federal Employer ID No. (FEIN):
930496342

5. **Permit Application Type:**

☐ Initial Permit — When did operations commence? 05/01/1998
☑ Permit Renewal — What is the expiration date of the existing permit? 05/30/2024
☐ Update to Initial/Renewal Permit Application

6. Type of Business Entity:

☑ Corporation ☐ Governmental Agency ☐ LLC
☐ Partnership ☐ Limited Partnership

7. Is the Applicant the:

☐ Owner ☐ Operator ☑ Both

If the Applicant is not both the owner and operator, please provide the name and address of the other party.

8. Number of onsite employees:

69

9. Governmental Code:

☑ Privately owned and operated; 0
☐ Federally owned and operated; 1
☐ State government owned and operated; 2
☐ County government owned and operated; 3
☐ Municipality government owned and operated; 4
☐ District government owned and operated; 5

10. Business Confidentiality Claims

Does this application include confidential information (per 45CSR31)? ☐ Yes ☑ No

If yes, identify each segment of information on each page that is submitted as confidential, and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's *"PRECAUTIONARY NOTICE-CLAIMS OF CONFIDENTIALITY"* guidance.

11. Mailing Address		
Street or P.O. Box: PO Box 1769		
City: Craigsville	**State:** WV	**Zip:** 26205
Telephone Number: (304) 742-5180	**Fax Number:** (304) 742-5188	

12. Facility Location (Physical Address)		
Street: 500 JELD-WEN Road	**City:** Craigsville	**County:** Nicholas
UTM Easting: 529749.6 km	**UTM Northing:** 4244034 km	**Zone:** ☑ 17 or ☐ 18
Directions: Take I-79N from Charleston 59 mi. Take exit 57 and turn right on US-19 S 21 mi. Take the W Virginia 55 and turn left on E 1 mi. Turn right to stay on W Virginia 55 E 11.7 mi. Turn left at the turn lane onto Columbia Forest Products Rd. 0.1 mi Turn left onto JELD-WEN Road 0.2 mi		
Portable Source? ☐ Yes ☑ No		
Is facility located within a nonattainment area? ☐ Yes ☑ No		**If yes, for what air pollutants?**
Is facility located within 50 miles of another state? ☐ Yes ☑ No		**If yes, name the affected state(s).**
Is facility located within 100 km of a Class I Area[1]? ☑ Yes ☐ No **If no, do emissions impact a Class I Area[1]?** ☐ Yes ☑ No		**If yes, name the area(s).** New River Gorge National Park and Preserve

[1] *Class I areas include Dolly Sods and Otter Creek Wilderness Areas in West Virginia, and Shenandoah National Park and James River Face Wilderness Area in Virginia.*

13. Contact Information		
Responsible Official: Jay Borrell		**Title:** Plant Manager
Street or P.O. Box: PO Box 1769		
City: Craigsville	**State:** WV	**Zip:** 26205
Telephone Number: (304)742-5180	**Cell Number:** (304) 619-3510	
E-mail address: jborrell@jeldwen.com		
Environmental Contact: Randy Taylor		**Title:** **Supervisor Health & Safety**
Street or P.O. Box: PO Box 1769		
City: Craigsville	**State:** WV	**Zip:** 26205
Telephone Number: (304) 742-5180	**Cell Number:** (304) 651-3550	
E-mail address: rtaylor@jeldwen.com		
Application Preparer: Randy Taylor		**Title:** Supervisor Health & Safety
Company: JELD-WEN, Inc.		
Street or P.O. Box: PO Box 1769		
City: Craigsville	**State:** WV	**Zip:** 26205
Telephone Number: (304) 742-5180	**Cell Number:** (304) 651-3550	
E-mail address: rtaylor@jeldwen.com		

14. Facility Description

List all processes, products, NAICS and SIC codes for normal operation, in order of priority. Also list any process, products, NAICS and SIC codes associated with any alternative operating scenarios if different from those listed for normal operation.

Process	Products	NAICS	SIC
Wood Fiber Door Skin Mfg.	Wood Fiber Door Skins	321219	2493
Coating Manufacturing	Coatings	325500	2800

Provide a general description of operations.

The facility manufactures wood fiber door skins in a process similar to the hardboard manufacturing process. Wood chips are mechanically separated into individual fibers at the refiner and dried in a steam and natural gas heated tube dryer. Next, the fiber is blended with MDI resin and formed into a fiber mat. The mat continues through an unheated precompressor followed by a series of saws that cut each mat to size. Mats are consolidated in a steam-heated press. After the press, the door skins are cut to the final dimensions and coated with waterborne primer. In addition to the door skin manufacturing the facility also produces coatings products (paints, adhesives, etc.) which are consumed internally and sold externally.

15. Provide an **Area Map** showing plant location as **ATTACHMENT A**.

16. Provide a **Plot Plan(s)**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is located as **ATTACHMENT B**. For instructions, refer to "Plot Plan - Guidelines."

17. Provide a detailed **Process Flow Diagram(s)** showing each process or emissions unit as **ATTACHMENT C**. Process Flow Diagrams should show all emission units, control equipment, emission points, and their relationships.

Section 2: Applicable Requirements

18. Applicable Requirements Summary	
Instructions: Mark all applicable requirements.	
☐ SIP	☐ FIP
☑ Minor source NSR (45CSR13)	☐ PSD (45CSR14)
☑ NESHAP (45CSR34)	☐ Nonattainment NSR (45CSR19)
☐ Section 111 NSPS	☐ Section 112(d) MACT standards
☐ Section 112(g) Case-by-case MACT	☐ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☐ Section 129 Standards/Reqts.	☐ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☑ 45CSR27 State enforceable only rule
☑ 45CSR4 State enforceable only rule	☐ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☑ **C**ompliance **A**ssurance **M**onitoring (40CFR64)
☐ Cross-State Air Pollution Rule (45CSR43)	

19. Non Applicability Determinations
List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.
The non-applicability determinations in the existing permit remain unchanged.
☐ Permit Shield

19. Non Applicability Determinations *(Continued)* - *Attach additional pages as necessary.*

List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.

☐ Permit Shield

20. Facility-Wide Applicable Requirements

List all facility-wide applicable requirements. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*).

3.1.1., 45CSR§6-3.1.
3.1.2., 45CSR§6-3.2.
3.1.3., 40 C.F.R. §61.145(b) and 45CSR34
3.1.4., 45CSR§4-3.1 State-Enforceable only.
3.1.5., 45CSR§11-5.2
3.1.6., W.Va. Code § 22-5-4(a)(14)
3.1.7., 40 C.F.R. 82, Subpart F
3.1.8., 40 C.F.R. 68
3.1.9., 45CSR §7-5.1.]
3.1.10., 45CSR §7-5.2.

☐ Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing / recordkeeping / reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

3.3.1., WV Code § 22-5-4(a)(14-15), 45CSR2, 45CSR7, 45CSR10, 45CSR16, 40CFR§60.45c.and 45CSR13
3.4.1., [45CSR§30-5.1.c.2.A.; 45CSR13 – Permit R13-2192 §4.3.1.]
3.4.3., [45CSR§30-5.1.c. State-Enforceable only.]
3.4.4., 45CSR§30-5.1.c.
3.5.1., 45CSR§§30-4.4. and 5.1.c.3.D.
3.5.2., 45CSR§30-5.1.c.3.E.
3.5.4., 45CSR§30-8.
3.5.5., 45CSR§30-5.3.e.
3.5.6., 45CSR§30-5.1.c.3.A.
3.5.8., 45CSR§30-5.1.c.3.C. & 45CSR§30-5.1.c.3.B.
3.5.9., 45CSR§30-4.3.h.1.B.]
3.7.1., 45CSR§30-5.6.

Are you in compliance with all facility-wide applicable requirements? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

20. Facility-Wide Applicable Requirements *(Continued)* - *Attach additional pages as necessary.*

List all facility-wide applicable requirements. For each applicable requirement, include the rule citation and/or permit with the condition number.

☐ Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing/recordkeeping/ reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Are you in compliance with all facility-wide applicable requirements? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

21. Active Permits/Consent Orders		
Permit or Consent Order Number	Date of Issuance MM/DD/YYYY	List any Permit Determinations that Affect the Permit *(if any)*
R30-067-00095-2019 (MM-01)	10/11/2023	
R13-2192R	08/08/2023	

22. Inactive Permits/Obsolete Permit Conditions		
Permit Number	Date of Issuance MM/DD/YYYY	Permit Condition Number
NA		

Section 3: Facility-Wide Emissions

23. Facility-Wide Emissions Summary [Tons per Year]	
Criteria Pollutants	Potential Emissions
Carbon Monoxide (CO)	97.2
Nitrogen Oxides (NO_X)	181.4
Lead (Pb)	0.0132
Particulate Matter ($PM_{2.5}$)[1]	19.1
Particulate Matter (PM_{10})[1]	25.6
Total Particulate Matter (TSP)	44.7
Sulfur Dioxide (SO_2)	7.0
Volatile Organic Compounds (VOC)	162.5
Hazardous Air Pollutants[2]	Potential Emissions
Total HAPs	17.69
Regulated Pollutants other than Criteria and HAP	Potential Emissions
N_2O	2.6
CH_4	20.0
CO_2	94,623

[1]$PM_{2.5}$ and PM_{10} are components of TSP.
[2]For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section.

Section 4: Insignificant Activities

24. Insignificant Activities (Check all that apply)		
☑	1.	Air compressors and pneumatically operated equipment, including hand tools.
☑	2.	Air contaminant detectors or recorders, combustion controllers or shutoffs.
☑	3.	Any consumer product used in the same manner as in normal consumer use, provided the use results in a duration and frequency of exposure which are not greater than those experienced by consumer, and which may include, but not be limited to, personal use items; janitorial cleaning supplies, office supplies and supplies to maintain copying equipment.
☑	4.	Bathroom/toilet vent emissions.
☑	5.	Batteries and battery charging stations, except at battery manufacturing plants.
☑	6.	Bench-scale laboratory equipment used for physical or chemical analysis, but not lab fume hoods or vents. Many lab fume hoods or vents might qualify for treatment as insignificant (depending on the applicable SIP) or be grouped together for purposes of description.
☐	7.	Blacksmith forges.
☑	8.	Boiler water treatment operations, not including cooling towers.
☑	9.	Brazing, soldering or welding equipment used as an auxiliary to the principal equipment at the source.
☐	10.	CO_2 lasers, used only on metals and other materials which do not emit HAP in the process.
☑	11.	Combustion emissions from propulsion of mobile sources, except for vessel emissions from Outer Continental Shelf sources.
☑	12.	Combustion units designed and used exclusively for comfort heating that use liquid petroleum gas or natural gas as fuel.
☑	13.	Comfort air conditioning or ventilation systems not used to remove air contaminants generated by or released from specific units of equipment.
☐	14.	Demineralized water tanks and demineralizer vents.
☐	15.	Drop hammers or hydraulic presses for forging or metalworking.
☑	16.	Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.
☐	17.	Emergency (backup) electrical generators at residential locations.
☐	18.	Emergency road flares.
☑	19.	Emission units which do not have any applicable requirements, and which emit criteria pollutants (CO, NO_x, SO_2, VOC and PM) into the atmosphere at a rate of less than 1 pound per hour and less than 10,000 pounds per year aggregate total for each criteria pollutant from all emission units. Please specify all emission units for which this exemption applies along with the quantity of criteria pollutants emitted on an hourly and annual basis: Resin Storage Tank (ST1) – Less than 0.01 lbs/hr Resin Storage Tank (ST2) – Less than 0.01 lbs/hr Wax Storage Tank (ST3) – Less than 0.01 lbs/hr Coating Manufacturing Baghouse ((BH5) – PM Emissions 0.01 lbs/hr; 0.02 tons/yr

24. Insignificant Activities (Check all that apply)		
☑	20.	Emission units which do not have any applicable requirements and which emit hazardous air pollutants into the atmosphere at a rate of less than 0.1 pounds per hour and less than 1,000 pounds per year aggregate total for all HAPs from all emission sources. This limitation cannot be used for any source which emits dioxin/furans nor for toxic air pollutants as per 45CSR27. Please specify all emission units for which this exemption applies along with the quantity of hazardous air pollutants emitted on an hourly and annual basis: Resin Storage Tank (ST2) – Less than 0.01 lbs/hr Resin Storage Tank (ST1) – Less than 0.01 lbs/hr Wax Storage Tank (ST3) – Less than 0.01 lbs/hr
☐	21.	Environmental chambers not using hazardous air pollutant (HAP) gases.
☐	22.	Equipment on the premises of industrial and manufacturing operations used solely for the purpose of preparing food for human consumption.
☐	23.	Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
☑	24.	Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
☑	25.	Equipment used for surface coating, painting, dipping or spray operations, except those that will emit VOC or HAP.
☑	26.	Fire suppression systems.
☐	27.	Firefighting equipment and the equipment used to train firefighters.
☐	28.	Flares used solely to indicate danger to the public.
☑	29.	Fugitive emission related to movement of passenger vehicle provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
☐	30.	Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation.
☑	31.	Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning or machining wood, metal or plastic.
☐	32.	Humidity chambers.
☐	33.	Hydraulic and hydrostatic testing equipment.
☑	34.	Indoor or outdoor kerosene heaters.
☑	35.	Internal combustion engines used for landscaping purposes.
☐	36.	Laser trimmers using dust collection to prevent fugitive emissions.
☐	37.	Laundry activities, except for dry-cleaning and steam boilers.
☑	38.	Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
☑	39.	Oxygen scavenging (de-aeration) of water.
☐	40.	Ozone generators.

24. Insignificant Activities (Check all that apply)		
☑	41.	Plant maintenance and upkeep activities (e.g., grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots) provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and not otherwise triggering a permit modification. (Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must still get a permit if otherwise requested.)
☐	42.	Portable electrical generators that can be moved by hand from one location to another. "Moved by Hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.
☑	43.	Process water filtration systems and demineralizers.
☑	44.	Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating or de-greasing (solvent metal cleaning) activities, and not otherwise triggering a permit modification.
☑	45.	Repairs or maintenance where no structural repairs are made and where no new air pollutant emitting facilities are installed or modified.
☐	46.	Routing calibration and maintenance of laboratory equipment or other analytical instruments.
☑	47.	Salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants. Shock chambers.
☐	48.	Shock chambers.
☐	49.	Solar simulators.
☑	50.	Space heaters operating by direct heat transfer.
☐	51.	Steam cleaning operations.
☑	52.	Steam leaks.
☐	53.	Steam sterilizers.
☑	54.	Steam vents and safety relief valves.
☐	55.	Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
☑	56.	Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP. Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids should be based on size limits such as storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.
☐	57.	Such other sources or activities as the Director may determine.
☑	58.	Tobacco smoking rooms and areas.
☐	59.	Vents from continuous emissions monitors and other analyzers.

Section 5: Emission Units, Control Devices, and Emission Points

25. Equipment Table
Fill out the **Title V Equipment Table** and provide it as **ATTACHMENT D**.
26. Emission Units
For each emission unit listed in the **Title V Equipment Table**, fill out and provide an **Emission Unit Form** as **ATTACHMENT E**.
For each emission unit not in compliance with an applicable requirement, fill out a **Schedule of Compliance Form** as **ATTACHMENT F**.
27. Control Devices
For each control device listed in the **Title V Equipment Table**, fill out and provide an **Air Pollution Control Device Form** as **ATTACHMENT G**.
For any control device that is required on an emission unit in order to meet a standard or limitation for which the potential pre-control device emissions of an applicable regulated air pollutant is greater than or equal to the Title V Major Source Threshold Level, refer to the **Compliance Assurance Monitoring (CAM) Form(s)** for CAM applicability. Fill out and provide these forms, if applicable, for each Pollutant Specific Emission Unit (PSEU) as **ATTACHMENT H**.

Section 6: Certification of Information

28. Certification of Truth, Accuracy and Completeness and Certification of Compliance

Note: This Certification must be signed by a responsible official as defined in 45CSR§30-2.38.

a. Certification of Truth, Accuracy and Completeness

I certify that I am a responsible official (as defined at 45CSR§30-2.38) and am accordingly authorized to make this submission on behalf of the owners or operators of the source described in this document and its attachments. I certify under penalty of law that I have personally examined and am familiar with the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine and/or imprisonment.

b. Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

Responsible official (type or print)

Name: Jay Borrell	Title: Plant Manager

Responsible official's signature:

Signature: J Borrell Signature Date: 11-15-23

(Must be signed and dated in blue ink or have a valid electronic signature)

Note: Please check all applicable attachments included with this permit application:

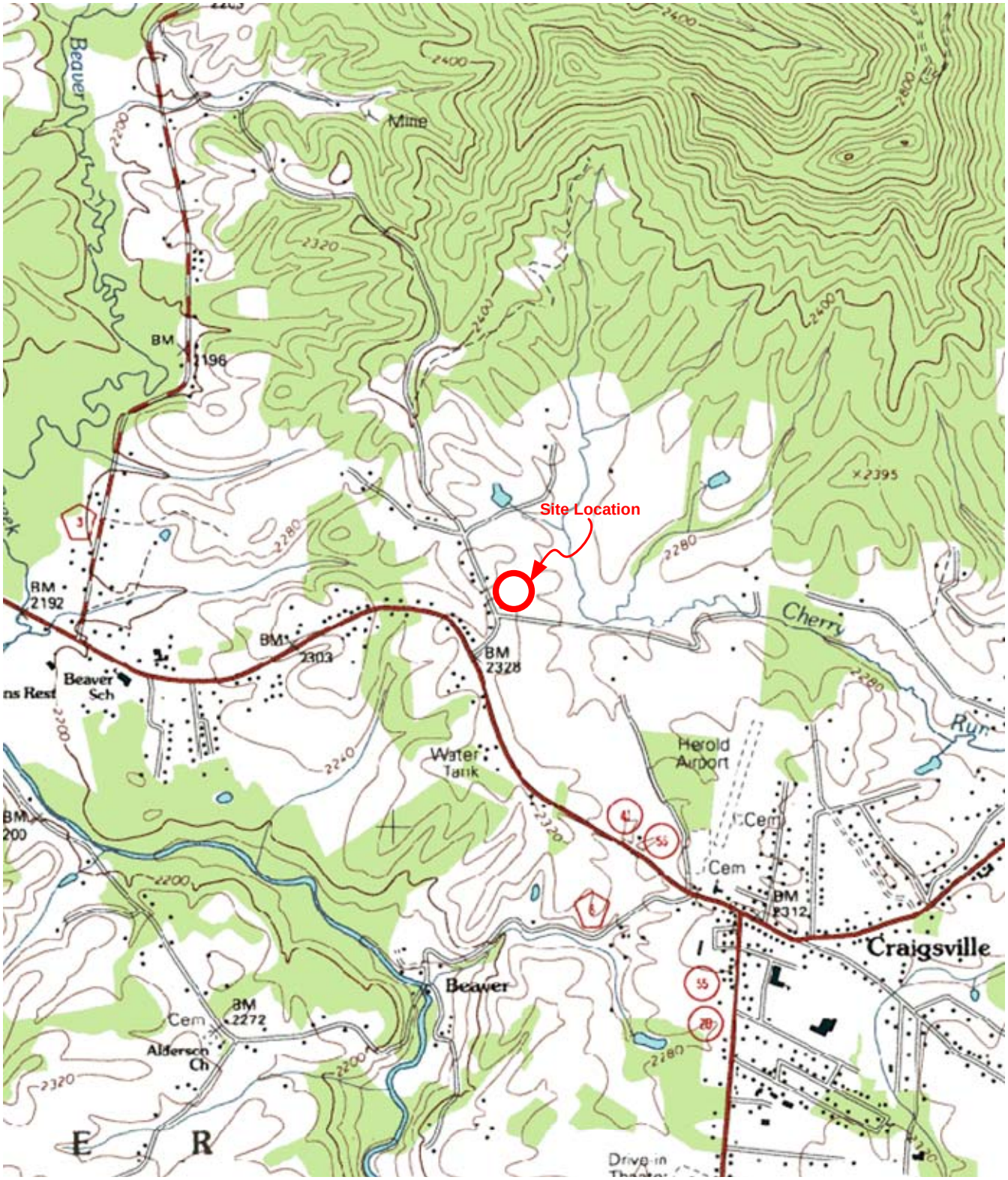
☑	ATTACHMENT A: Area Map
☑	ATTACHMENT B: Plot Plan(s)
☑	ATTACHMENT C: Process Flow Diagram(s)
☑	ATTACHMENT D: Equipment Table
☑	ATTACHMENT E: Emission Unit Form(s)
☐	ATTACHMENT F: Schedule of Compliance Form(s)
☑	ATTACHMENT G: Air Pollution Control Device Form(s)
☑	ATTACHMENT H: Compliance Assurance Monitoring (CAM) Form(s)

All of the required forms and additional information can be found and downloaded from, the DEP website at www.dep.wv.gov/daq, requested by phone (304) 926-0475, and/or obtained through the mail.

JELD-WEN

Craigsville, West Virginia
Topographic Map (July,1979)

Map center is 38° 20' 26"N, 80° 39' 44"W (WGS84/NAD83)
USGS Craigsville quadrangle



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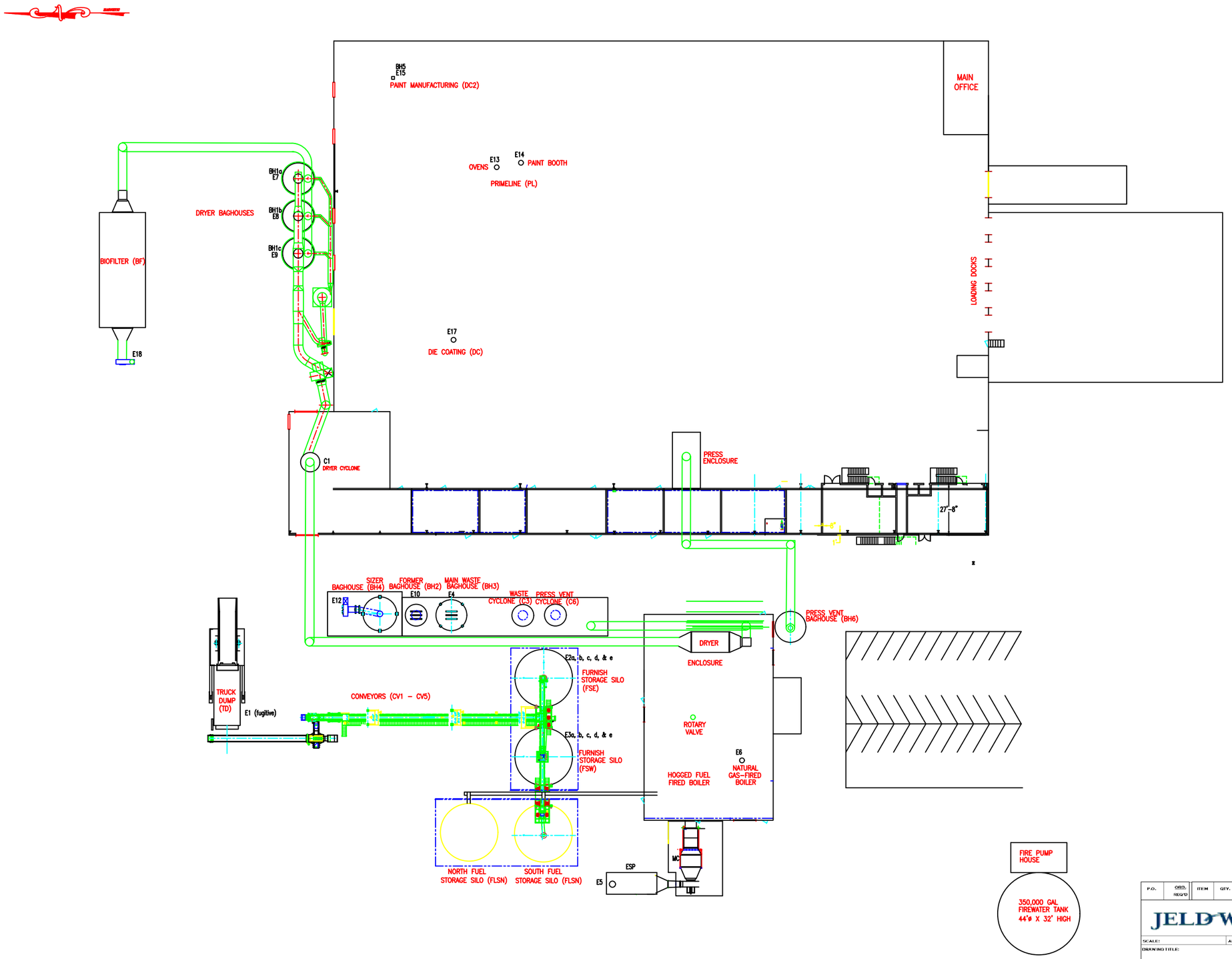
JELD-WEN Environmental Engineering

DWG. NUMBER

REVISION	DATE	DESCRIPTION	BY



P.O.	ORD. REQ'D	ITEM	QTY.	DESCRIPTION	WGHT.

JELD-WEN ENGINEERING: ENVIRONMENTAL ENGINEERING

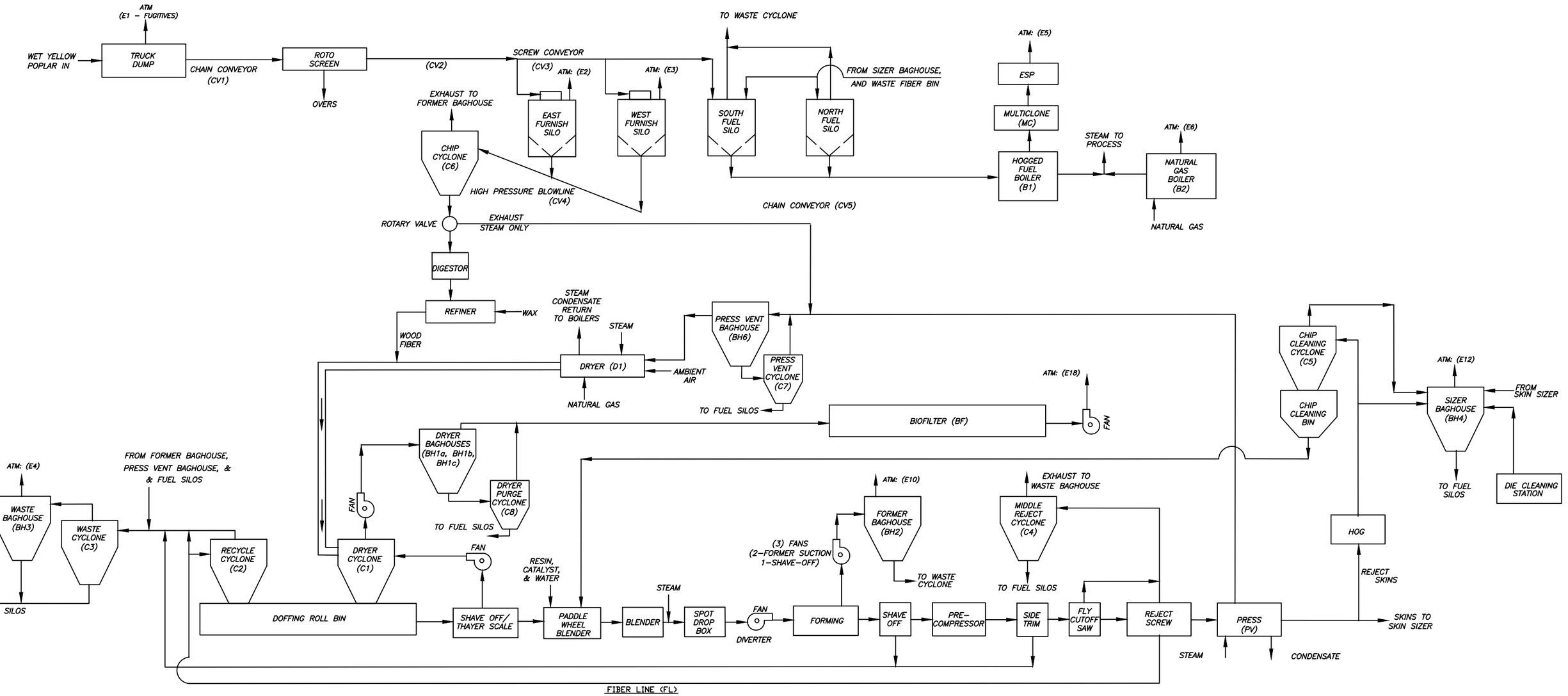
PHONE (541) 882-7426
P.O. BOX 1329 KLAMATH FALLS, OR

SCALE:	APPROVED BY:	DATE: July 2012	DRAWN BY: NCW

DRAWING TITLE:

Emission Source Map

PROJECT NUMBER	PLANT NAME & LOCATION	DWG. NUMBER	REV.	SHEET 1 OF 1 SHEETS
	JELD-WEN CRAIGSVILLE, WEST VIRGINIA			



JELD-WEN

PROCESS FLOW DIAGRAM
JELD–WEN WOOD FIBER DIVISION – WEST VIRGINIA
500 JELD–WEN Road
CRAIGSVILLE, WEST VIRGINIA

FIGURE: 1

ATTACHMENT D - Title V Equipment Table

(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Unit ID[1]	Emission Point ID[1]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Control Device[1]
TD	E1(fugitive)	Truck Dump	May 1, 1998	39,303 lbs/hr	None
FSE	E2a,b,c,d,e	East Furnish Storage Silo	May 1, 1998	46,563 ft3	None
FSW	E3a,b,c,d,e	West Furnish Storage Silo	May 1, 1998	46,563 ft3	None
FLSN	E4	North Fuel Storage Silo	May 1, 1998	28,270 ft3	BH3 (Baghouse)
FLSS	E4	South Fuel Storage Silo	May 1, 1998	28,270 ft3	BH3 (Baghouse)
FLa	E4	Fiber Line Prior to Press (Former)	May 1, 1998	13,323 lbs/hr	BH2 (Baghouse)
C2	E4	Recycle Cyclone	May 1, 1998	1,404 lbs/hr	BH3 (Baghouse)
C3	E4	Waste Cyclone	May 1, 1998	3084 lbs/hr	BH3 (Baghouse)
C4	E4	Middle Reject Cyclone	May 1, 1998	1416 lbs/hr	BH3 (Baghouse)
C6	E4	Chip Cyclone	May 1, 1998	25,141 lbs/hr	BH3 (Baghouse)
B1	E5	Hogged Fuel-Fired Boiler	May 1, 1998	62.5 MMBtu/hr	MC (multiclone), ESP (Electrostatic Pre
B2	E6	Natural Gas-Fired Boiler	May 1, 1998	37.7 MMBtu/hr	None
D1	E18	Fiber Dryer	May 1, 1998	23,942 lbs/hr	BH1a, BH1b, BH1c, BF
C1	E18	Dryer Cyclone	May 1, 1998	30,257 lbs/hr	BH1a, BH1b, BH1c, BF
C8	E18	Dryer Baghouse Purge Cyclone	May 1, 1998	314.3 lbs/hr	BH1a, BH1b, BH1c, BF
PV	E18	Press Vents	May 1, 1998	25,139 lbs/hr	BH1a, BH1b, BH1c, BF
C7	E18	Press Vent Baghouse Purge Cyclone	2013	3.4 lbs/hr	BH1a, BH1b, BH1c, BF
FLa	E10	Fiber Line Prior to Press (Former)	May 1, 1998	13,323 lbs/hr	BH2, BH3
FLb	E12	Fiber Line After Press (Sizer)	May 1, 1998	21,591 SF/hr	BH4 (Baghouse)
C5	E12	Chip Cleaning Cyclone	May 1, 1998	2,667 lbs/hr	BH4 (Baghouse)
DC	E12	Die Cleaning Operation	2009	120 lbs/hr Na2CO3	BH4 (Baghouse)
PL	E13	Primeline (Ovens)	May 1, 1998	3.8 MMBtu/hr (total)	None
PL	E14	Primeline (Paint Booth)	May 1, 1998	74.6 gals/hr	None
~~DC2~~ CM	E15	Coating Manufacturing	April 1999	600 batches/yr	BH5 (Baghouse)
RV	E16	Rotary Valve	May 1, 1998	23,944 lbs/hr	None

[1]For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

ATTACHMENT D - Title V Equipment Table

(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Unit ID[1]	Emission Point ID[1]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Control Device[1]
~~DC~~ DB	E17	Die Coating	May 1, 1998	145 gal coating/yr	None
CV1-5	Fugitive	Conveyors	May 1, 1998	148 tons/hr	None
RS	Fugitive	Rotary Classifier	May 1, 1998	40 ton/hr	None
ST1	Fugitive	Resin Storage Tank 1	May 1, 1998	7,000 gallons	None
ST2	Fugitive	Resin Storage Tank 2	May 1, 1998	7,000 gallons	None
ST3	Fugitive	Wax Storage Tank	May 1, 1998	10,000 gallons	None
ST4	Fugitive	Coating Storage Tank	May 1, 1999	10,000 gallons	None
ST5	Fugitive	Coating Storage Tank	April 1, 1999	6,000 gallons	None
ST6	Fugitive	Coating Storage Tank	May 1, 1999	10,000 gallons	None
ST7	Fugitive	Coating Storage Tank	May 1, 1999	10,000 gallons	None
ST8	Fugitive	Coating Storage Tank	May 1, 1999	10,000 gallons	None
ST9	Fugitive	Coating Storage Tank	April 1, 1999	6,000 gallons	None

[1]For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
B1	Hogged Fuel-Fired Boiler	MC, ESP

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Wood-fired fuel cell boiler used for facility steam production.

Manufacturer:	**Model number:**	**Serial number:**
Wellons	IDIC8.0	
Construction date:	**Installation date:**	**Modification date(s):**
05/01/1997	05/01/1997	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

62.5MMBtu/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
62.5MMBtu/hr	546,131 MMBtu/yr	8322

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? [X] Yes [ ] No	**If yes, is it?** [ ] Indirect Fired [X] Direct Fired
Maximum design heat input and/or maximum horsepower rating: 62.5 MMBtu/hr	**Type and Btu/hr rating of burners:** Fuel Cell-Closed couples gasifier with vertical cylindrical combusting cell;62.5MMBtu/hr

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Wood Fuel 7,805 BD-lbs/hr, 34,099 BDT/yr

Describe each fuel expected to be used during the term of the permit.

Wood Fuel			8,008 Btu/BD-lb

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	20.25	88.49
Nitrogen Oxides (NO_X)	33.24	145.22
Lead (Pb)	0.003	0.01
Particulate Matter ($PM_{2.5}$)	1.03	4.49
Particulate Matter (PM_{10})	1.03	4.49
Total Particulate Matter (TSP)	1.03	4.49
Sulfur Dioxide (SO_2)	1.56	6.83
Volatile Organic Compounds (VOC)	1.08	4.74
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
See Attachment J, Table 3		
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
N_2O (5)	0.58	2.53
CH_4 (5)	4.41	19.26
CO_2 (5)	12,925	56468.16

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) All emission estimates include the effect of applied control devices.

(2) Emission factors were taken from a source test performed at the JELD-WEN, Craigsville,
West Virginia facility in April 2003. Two standard deviations were added to the results as a safety factor.

(3) Calculations assume that 100% of TSP is $PM_{2.5}$.

(4) Emission factors were taken from AP-42, Chapter 1.6, Wood Residue Combustion (9/2003).

(5) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Conditions
4.1.1., [45CSR §2-3.1., 45CSR16, 40CFR§60.43c(c)]
4.1.2., **[45CSR§2-9.1.]**
4.1.3., **[45CSR §2-4.4.]**
4.1.4., **[45CSR §2-9.2., 45CSR16, 40 CFR §60.11(d)]**
4.1.5., **[45CSR16, 40 CFR §§60.43c(b) and (d)]**
4.1.6., [45CSR13 – Permit R13-2192 §4.1.7.]
4.1.8. **[45CSR §10-3.8.]**
4.1.9. [45CSR §2-5.1.]
4.1.10. [45CSR13 – Permit R13-2192 §4.1.21, 45CSR§13-5.10.]
4.1.11., [45CSR34; 40 CFR §63.11201(b) and Table 2, Item 6 of 40CFR63, Subpart JJJJJJ; 45CSR13 – Permit R13-2192 §4.1.17.]
4.1.12. [45CSR34; 40 CFR §63.11201(b) and Table 2, Item 16 of 40CFR63, Subpart JJJJJJ; 45CSR13 – Permit R13-2192 §4.1.18.]
4.1.13. [45CSR13 – Permit R13-2192 §4.1.19.]
4.1.15. [45CSR34; 40 CFR §§63.11223(a) and (b)]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)
See Title V Operating Permit R30-06700095-2019 (MM01) Conditions
4.2 Monitoring Requirements
4.2.1., **[45CSR §2-3.2., 45CSR16, 40 CFR §§60.47c(a) & (b)]**
4.2.3., **[45CSR§30-5.1.c.]**

4.3 Testing Requirements
4.3.1., **[45CSR§30-5.1.c.]**
4.3.2. [45CSR13 – Permit R13-2192 §4.2.1.]

4.4 Recordkeeping Requirements
4.4.1., **[45CSR§30-5.1.c.]**
4.4.2., **[45CSR§2-8.3.c., 45CSR§2A-7.1., 40 CFR §60.48c(g), 45CSR16]**
4.4.3., [45CSR13 – Permit R13-2192 §4.3.10.]
4.4.5. [45CSR34; 40 CFR §§63.11225(c)(1), (c)(2), and (d)]

4.5 Reporting Requirements
4.5.1., **[45CSR §2-9.3.]**
4.5.2., **[40 CFR §60.48c(b), 45CSR16]**
4.5.3., **[40 CFR §60.48c(c), 45CSR16]**
4.5.4., **[40 CFR §60.48c(j), 45CSR16]**
4.5.5. [45CSR34; 40 CFR §§63.11225(b), (b)(1), and (b)(2)]

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
B2	Natural Gas-Fired Boiler	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Natural Gas-Fired Boiler

Manufacturer:	**Model number:**	**Serial number:**
Burnham	25113	3P900506060PF
Construction date: 1997	**Installation date:** 1997	**Modification date(s):** 08/31/2001, boiler retubed

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):
37.7 MMBtu/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
37.7 MMBtu/hr	329,426 MMBtu/yr	8322

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? [X] Yes [ ] No	**If yes, is it?** [ ] Indirect Fired [X] Direct Fired
Maximum design heat input and/or maximum horsepower rating: 37.7 MMBtu/hr	**Type and Btu/hr rating of burners:** 37.7 MMBtu/hr

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas 37.7 MMBtu/hr. and 329,426 MMBtu/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	0.022 gr/100 ft^3	0%	1077

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.02	0.11
Nitrogen Oxides (NO_X)	5.97	26.07
Lead (Pb)	0.00002	0.00008
Particulate Matter ($PM_{2.5}$)	0.07	0.29
Particulate Matter (PM_{10})	0.20	0.87
Total Particulate Matter (TSP)	0.27	1.16
Sulfur Dioxide (SO_2)	0.02	0.09
Volatile Organic Compounds (VOC)	0.19	0.84
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
See Attachment J, Table 5		
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
N_2O (4)	0.01	0.04
CH_4 (4)	0.10	0.44
CO_2 (4)	5353	23,389.14

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Natural Gas Combustion (7/1998).

(2) Emission factor taken from AP-42, Chapter 1.4, Natural Gas Combustion. PM10= Condensable, PM2.5 = Filterable.

(3) Emission factors were taken from an engineering source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville,

West Virginia facility in April 2003.

The emission factors are equal to the average of the test values plus two standard deviations.

(4) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Conditions
4.1.1., [45CSR §2-3.1., 45CSR16, 40CFR§60.43c(c)]
4.1.2., **[45CSR§2-9.1.]**
4.1.4., **[45CSR §2-9.2., 45CSR16, 40 CFR §60.11(d)]**
4.1.7., [45CSR13 – Permit R13-2192 §4.1.8.]
4.1.8. **[45CSR §10-3.8.]**
4.1.14., [45CSR13 – Permit R13-2192 §4.1.20
4.1.15., [45CSR34; 40 CFR §§63.11223(a) and (b)]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Conditions
4.2 Monitoring Requirements
4.2.2., **[45CSR §2-3.2. and 45CSR§30-5.1.c.]**
4.2.3 **[45CSR§30-5.1.c.]**

4.4 Recordkeeping Requirements
4.4.1., **[45CSR§30-5.1.c.]**
4.4.2., **[45CSR§2-8.3.c., 45CSR§2A-7.1., 40 CFR §60.48c(g), 45CSR16]**
4.4.4., [45CSR13 – Permit R13-2192 §4.3.11.]
4.4.5., [45CSR34; 40 CFR §§63.11225(c)(1), (c)(2), and (d)]

4.5 Reporting Requirements
4.5.1., **[45CSR §2-9.3.]**
4.5.4., **[40 CFR §60.48c(j), 45CSR16]**
4.5.5., [45CSR34; 40 CFR §§63.11225(b), (b)(1), and (b)(2)]

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Cyclones (C2, C3)

Particulate emissions from the cyclones are affected by the material throughput and the size distribution of the material. Hourly emissions are estimated based on the maximum hourly throughput for each cyclone. Annual emissions are based on the estimated quantity of residuals generated with a door skin production rate of 188,668,062 sqft/year – 1/8" basis. Because particulate size distribution data is not available, all particulate matter emitted has been conservatively assumed to be $PM_{2.5}$. Emissions from these cyclones are controlled by baghouse (BH3).

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C2	Recycle Cyclone	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

B&R Sheetmetal – 6 ft. diameter with an LC cone length, See enclosed process description.

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal	6 ft. diameter with LC cone length	

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
1370 lbs/hr	2570 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO_X)		
Lead (Pb)		
Particulate Matter ($PM_{2.5}$)		
Particulate Matter (PM_{10})		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.0 Source-Specific Requirements

5.1 Limitations and Standards
5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.1 Monitoring Requirements
5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements
3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C3	Waste Cyclone	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See attached description

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal	6 ft. diameter with LC cone length	

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
3,084 lbs/hr	5,850 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.0 Source-Specific Requirements

5.1 Limitations and Standards
5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.2 Monitoring Requirements
5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements
3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Middle Reject Cyclone (C4)

Particulate emissions from this cyclone are based on 5 percent maximum throughput of the reject screw. The middle reject cyclone is used for the metal detect juncture. When metal is detected in the blow line it kicks the material to the middle reject cyclone. Material from this cyclone is then blown to the fuel silos. The middle reject cyclone runs a maximum of 5 hours/day. Emissions from this cyclone are controlled by baghouse (BH3).

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C4	Middle Reject Cyclone	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See attached description

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal	6 ft. diameter with LC cone length	

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
1416 lbs/hr	2663 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating:	**Type and Btu/hr rating of burners:**

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Chip Cleaning Cyclone (C5)

The Chip Cleaning Cyclone serves a maintenance function. As needed, hogged reject door skins (chips) are diverted from the Skin Sizer Baghouse (BH4) and sent to the Chip Cleaning Cyclone. The chips are then stored in a holding bin and augered into the blender once or twice per day for use as a mechanical cleaning agent. Approximately 80 ft^3 of chips are used every 12 hours for cleaning. The cyclone operates as needed to maintain a full storage bin, probably 10 to 12 hours per day.

The Chip Cleaning Cyclone does not generate any particulate emissions not already accounted for elsewhere in this permit application. The cyclone is controlled by the Skin Sizer Baghouse, and material is simply diverted to the cyclone instead of being sent directly to the baghouse.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C5	Chip Cleaning Cyclone	BH4

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See attached description.

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal	6 ft. diameter with LC cone length	

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
2602 lbs/hr	1465 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Chip Cyclone (C6)

Particulate emissions from this cyclone are affected by material throughput from the furnish silos. Hourly emissions have been based on the maximum hourly throughput. Material is transferred from the furnish silos by chain conveyor to a blow line which brings the material to the cyclone. Materials from the cyclone are sent to the rotary valve. Emissions from this cyclone are controlled by baghouse (BH3).

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C6	Chip Cyclone	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See attached description.

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal		
Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
25,141 lbs/hr	49,879 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C7	Press Vent Baghouse Purge Cyclone	BH6, BH1a, BH1b, BH1c, & BF

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

B&R Sheetmetal cyclone

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal		

Construction date:	**Installation date:**	**Modification date(s):**
2013	2013	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
3.4 lbs/hr	8.9 ODT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C8	Dryer Baghouse Purge Cyclone	BH1a, BH1b,BH1c, Biofilter

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

B&R Sheetmetal cyclone

Manufacturer:	**Model number:**	**Serial number:**
B&R Sheetmetal		
Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
314.3 lbs/hr	621.80 ODT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 8 & 9, Cyclone is vent to a baghouse, emissions are included in the applicable baghouse emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.8., **[45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]**
5.1.14., **[45CSR13 – Permit R13-2192 §4.1.15., 45CSR§13-5.11.]**
5.1.15., **[45CSR §7-3.1.]**
5.1.16., [45CSR §7-3.7.]
5.1.17., **[45CSR §7-4.12.]**
5.1.18., **[45CSR §7-9.1.]**

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
CV1-CV5	Conveyors	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

CV1 – Truck Dump to Rotary Classifier
CV2 – Rotary Classifier to Metal Detector
CV3 – Metal Detector to Furnish Storage Silos
CV4 – Furnish Storage Silos to Refiner
CV5 – Fuel Storage Silos to the Boiler

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	None

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):
CV1 – 18.4 tons/hr; CV2 – 18.4 tons/hr; CV3 – 18.4 tons/hr; CV4 – 12.6 tons/hr; CV5 – 3.9 tons/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
39,303 BD-lbs/hr (total)	63,618 BDT/yr (total)	8278 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.25	1.05
Particulate Matter (PM_{10})	1.67	6.91
Total Particulate Matter (TSP)	3.53	14.61
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 13.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

NA

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

NA

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Fiber Dryer and Dryer Cyclone Description

The fiber dryer is a tube dryer manufactured by Westec America. Heat is provided by both steam coils and the direct-firing of natural gas; each source is expected to provide about 50% of the heat input to the dryer. The natural gas burner is rated at 20 MMBtu/hr, but it is anticipated that it will normally be operated at about 50% of capacity. Dryer intake air includes the exhaust from the Press (PV) and the Rotary Valve (RV). The wood fiber exiting the dryer is separated from the air stream by the dryer cyclone and is then stored in the doffing roll bin.

Emissions from the dryer, and press are exhausted through the dryer cyclone. These emissions include VOC and HAP volatilized from the wood, natural gas combustion products, and particulate material from the fiber. Three Fiber Dryer Baghouses (BH1a, BH1b, and BH1c) control particulate emissions from the dryer cyclone. The exhaust from the three baghouses is vented into the Biofilter (BF) to control HAP emissions.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
D1/C1	Fiber Dryer and Dryer Cyclone	BH1a, BH1b, BH1c, BF

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description

Manufacturer:	**Model number:**	**Serial number:**
Dryer: Westec America Cyclone: B&R Sheetmetal	54 inch diameter x 270 feet long 10 ft. diameter x 20 ft. cone length	
Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):
20MMBtu/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
25,139 BD-lbs/hr	49,875 BDT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: 8,322 hrs/yr	**Type and Btu/hr rating of burners:** 20 MMBtu/hr Maxon RG-IV air flow burner

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.
Natural Gas – 21.54 MMscf/hr, 179,255 MMscf/yr.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	0.022 gr/100 ft^3	0%	1077

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----(1)	----(1)
Nitrogen Oxides (NO_X)	----(1)	----(1)
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----(1)	----(1)
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
N_2O	----(1)	----(1)
CH_3	----(1)	----(1)
CO_2	----(1)	----(1)

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 7, Cyclone is controlled by the Dryer Baghouses (BH1a, BH1b, BH1c) and be vented to the Biofilter (BF).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.2., **[45CSR13 – Permit R13-2192 §4.1.2.]**
5.1.8., [45CSR13 – Permit R13-2192 §4.1.10.; 45CSR§7-4.1]
5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.16., **[45CSR §7-3.7.]**
5.1.18., **[45CSR §7-4.12.]**

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. **[45CSR30-5.1.c., 40CFR§64.6(c)]**
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Die Coating Process (DB)

The die coating process will include five basic steps as follows:

Step 1. Clean the surface of each die half as needed prior to media blasting.

Step 2. Media blast the surface of each steel die half in an enclosed booth using re-circulated air with no vent to atmosphere.

Step 3. Wipe the surface of each die half surface clean with isopropyl alcohol and rags.

Step 4. Apply a surface coating to each die half using a HVLP paint gun in the new die coating paint booth vented to atmosphere (E17).

Step 5. Place each die half on a hot plate (E17), to cure the surface coating. The surface coating on each die is allowed to dry completely before installing the die in the door skin press.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
DB	Die Coating	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See Enclosed Process Description

Manufacturer:	**Model number:**	**Serial number:**
TBD	TBD	
Construction date:	**Installation date:**	**Modification date(s):**
TBD	TBD	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
0.1 gal coating/hr	97 gal coating /yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.01	0.01
Particulate Matter (PM_{10})	0.01	0.01
Total Particulate Matter (TSP)	0.01	0.01
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	2.08	1.0
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Methanol	0.08	0.04
Diethylene glycol monbutyl	0.13	0.07
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

(1) See Attachment J, Table 16

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.12 [45CSR13 – Permit R13-2192 §4.1.14.]

5.1.14[45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]

5.1.15 [45CSR §7-3.1.]

5.1.16 [45CSR §7-3.7.]

5.1.18. [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.2. **[45CSR13 – Permit R13-2192 §4.3.8.]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. [45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]

5.4.2 [45CSR13 – Permit R13-2192 §4.3.2.]

5.4.3 [45CSR13 – Permit R13-2192 §4.3.3.]

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of the Coating Manufacturing Process (CM)

The facility manufactures water-based primer used to prime door skins at Wood Fiber Division – West Virginia and other wood products at a number of JELD-WEN, inc. door manufacturing facilities. The primer is made by mixing water-based acrylic latex with a multiple additives and water. The maximum product usage and associated emissions are summarized in Attachment N, Supporting Emission Calculations.

During the pigment addition process, the dispenser is not operated in order to minimize any potential particulate emissions. A dust collector is positioned adjacent to the lid opening to draw any particulate that becomes suspended during the addition of the powder. Once the ingredients are added, the vacuum hose is attached to the opening in the lid to collect any material suspended during the dispersion process. The particulate matter collected by the dust collector is reused in subsequent batches. Emissions from the dust collector are vented inside the building.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:** Coating Manufacturing	**List any control devices associated with this emission unit:** BH5

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See Enclosed Process Description

Manufacturer: NA	**Model number:** NA	**Serial number:**
Construction date: 1999	**Installation date:** 04/01/1999	**Modification date(s):** **NA**

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

NA

Maximum Hourly Throughput: 1 batch/6 hours	**Maximum Annual Throughput:** 600 batches /yr	**Maximum Operating Schedule:** 3600 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.01	0.02
Particulate Matter (PM_{10})	0.01	0.02
Total Particulate Matter (TSP)	0.01	0.02
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	0.50	0.91
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Glycol Ether	0.321	0.58
Formaldehyde	0.0003	0.001
Styrene	0.002	0.003
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

(1) See Attachment J, Table 14, Table 15

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.11 [45CSR13 – Permit R13-2192 §4.1.13.; 45CSR§7-4.1]
5.1.14 [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15 [45CSR §7-3.1.
5.1.16 [45CSR §7-3.7.]
5.1.18 [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.1 **[45CSR13 – Permit R13-2192 §4.3.7.]**
5.2.6 45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7 [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. [45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]
5.4.2. [45CSR13 – Permit R13-2192 §4.3.2.]
5.4.3. [45CSR13 – Permit R13-2192 §4.3.3.]
5.4.7. [45CSR§30-5.1.c, 40 CFR §64.9(b)]

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Fiberline Prior to the Press (FL(a))

Particulate, VOC, and HAP emissions generated by the operation are included in the affected source FL(a). Particulate material generated by the shave-off and trimming operation is captured by hoods and conveyed to the Middle Reject Cyclone (C4), which is used to recycle material back into the process. Although the particulate material originates from FL(a), all particulate emissions are accounted for on the affected source sheet for C4. Particulate emissions from C4 are controlled by the Waste Baghouse (BH3).

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FLa	Fiber Line Prior to Press (Former)	BH2 & BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
BH2: 945 lbs/hr BH3: 379 lbs/hr	BH2: 1,829 ODT/yr BH3: 718 ODT/yr	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.95	1.83
Particulate Matter (PM_{10})	0.95	1.83
Total Particulate Matter (TSP)	0.95	1.83
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	0.22	0.89
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Formaldehyde	0.08	.33
Methanol	0.14	0.56
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Tables 9 & 10.

(2) Emissions from FLa eventually vent to atmosphere through the Former Baghouse (BH2) and the Waste Baghouse (BH3). Emissions listed here are for the former Baghouse only. The Waste Baghouse emissions are accounted for by other emission units.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.16., **[45CSR §7-3.7.]**
5.1.18 [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. [45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.2]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of Fiberline After Press (FL(b))

After the door skins exit the press, reject skins are chipped in an electric hog. The hogged material is pneumatically conveyed to the Sizer Baghouse (BH4). The rest of the skins continue to the unsized skin storage area prior to being cut to the final dimensions by the skin sizer saws. Particulate material generated by the sizing operation are captured by hoods and conveyed to BH4. The trim from the sizing operation is hogged and pneumatically conveyed to BH4.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FLb	Fiber Dryer After the Press (Sizer)	BH4

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

21,591 SF/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
BH4: 12,275 lbs/hr	BH4: 8,551 ODT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	6.14	4.28
Particulate Matter (PM_{10})	6.14	4.28
Total Particulate Matter (TSP)	6.14	4.28
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	0.23	0.16
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Formaldehyde	0.23	0.16
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Tables 9 & 10.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.
5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.16., **[45CSR §7-3.7.]**
5.1.18 [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.6. [45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7. [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.2]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FLSN	North Fuel Storage Silo	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The North Fuel Storage Silo emission unit collects and stores wood fuel from the truck dump and door skin manufacturing operation for the wood-fired boiler.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

28,740 ft^3

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
7,805 BD-lbs/hr (combined)	34,099 BDT/yr (combined)	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

(1) Emissions are controlled by BH3 (E4)

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.3. [45CSR30-5.1.c., 40CFR§64.6(c)]
5.2.4. [45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]
5.2.7 [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**
5.3.2. [45CSR13 – Permit R13-2192 §4.2.1.]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.7. **[45CSR§30-5.1.c , 40 CFR §64.9(b)]**

5.5 Reporting Requirements

5.5.1. **[45CSR§30-5.1.c , 40 CFR §64.9(a)]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FLSS	South Fuel Storage Silo	BH3

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The South Fuel Storage Silo emission unit collects and stores wood fuel from the truck dump and door skin manufacturing operation for the wood-fired boiler.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

28,740 ft^3

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
7,805 BD-lbs/hr (combined)	34,099 BDT/yr (combined)	8322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) Emissions are controlled by BH (E4) .

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.3. [45CSR30-5.1.c., 40CFR§64.6(c)]
5.2.4. [45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]
5.2.7 [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**
5.3.2. [45CSR13 – Permit R13-2192 §4.2.1.]

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.7. **[45CSR§30-5.1.c , 40 CFR §64.9(b)]**

5.5 Reporting Requirements

5.5.1. **[45CSR§30-5.1.c , 40 CFR §64.9(a)]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FSE	East Furnish Storage Silo	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The East Furnish Storage Silo stores furnish from the truck dump until it is used in the door skin manufacturing operation.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

46,563 ft^3

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
18,359 BD-lbs/hr	26,192 BDT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.39	0.6
Particulate Matter (PM_{10})	0.39	0.6
Total Particulate Matter (TSP)	1.56	2.2
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 6.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

5.2 Monitoring Requirements

5.2.7., [45CSR§30-5.1.c., 40CFR§64.7(e)]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.7. **[45CSR§30-5.1.c , 40 CFR §64.9(b)]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FSW	West Furnish Storage Silo	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The West Furnish Storage Silo stores furnish from the truck dump until it is used in the door skin manufacturing operation.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

46,563 ft^3

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
18,359 BD-lbs/hr	26,192 BDT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.39	0.6
Particulate Matter (PM_{10})	0.39	0.6
Total Particulate Matter (TSP)	1.56	2.2
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 6.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

5.2 Monitoring Requirements

5.2.7., [45CSR§30-5.1.c., 40CFR§64.7(e)]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2. **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3. **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.7. **[45CSR§30-5.1.c , 40 CFR §64.9(b)]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Primeline Description

The doorskins are primed with a waterborne primer with a VOC content less than or equal to 0.3 lbs/gal. The primeline will consist of three ovens and a paint booth. The first oven, located upstream of the paint booth, will pre-heat the door skins. This oven is heated by gas-fired infrared elements with a total rated capacity of 1.4 MMBtu/hr. The second oven, located just downstream of the paint booth, is a steam-heated high-velocity convection oven, which will drive off the volatile components of the paint. The third oven will complete the curing of the paint. The third oven is heated by gas-fired infrared elements with a total rated capacity of 2.4 MMBtu/hr.

The primer will be applied using automatic spray guns. The primer will be reduced slightly with water to obtain the proper viscosity for spraying. Because the primer is waterborne, organic solvents will not be used either for thinning or for clean-up.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
PL	Primeline	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description

Manufacturer:	**Model number:**	**Serial number:**
George Koch Sons (ovens)	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

1.4 MMBtu/hr (1st oven); 2.4 MMBtu/hr (3rd oven)

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
74.6 gallons primer/hr	561,287 gallons primer/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: 3.8 MMBtu/hr	**Type and Btu/hr rating of burners:** 1.4 MMBtu/hr (1st oven); 2.4 MMBtu/hr (3rd oven)

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas – 3.8 MMBtu/hr, 33,205 MMBtu/yr.

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	0.022 gr/100 ft^3	0%	1,077

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.30	1.29
Nitrogen Oxides (NO_X)	0.35	1.54
Lead (Pb)	Insignificant(2)	Insignificant(2)
Particulate Matter ($PM_{2.5}$)	0.01	0.03
Particulate Matter (PM_{10})	0.02	0.09
Total Particulate Matter (TSP)	0.03	0.12
Sulfur Dioxide (SO_2)	0.002	0.01
Volatile Organic Compounds (VOC)(1)	22.38	84.19
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	----(2)	----(2)
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
N_2O	Insignificant(2)	Insignificant(2)
CH_4	0.01	0.04
CO_2	540	2358

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) VOC emissions are combined total from E13, & E14.
(2) See Attachment J, Tables 11a, 11b, & 12

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.5., **[45CSR13 – Permit R13-2192 §4.1.5]**
5.1.9., [45CSR13 – Permit R13-2192 §4.1.11.; 45CSR§7-4.1]
5.1.10., [45CSR13 – Permit R13-2192 §4.1.12.; 45CSR§7-4.1]
5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.16., **[45CSR §7-3.7.]**
5.1.17**.,** [45CSR §7-4.12.]
5.1.18**.,** [45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.5., [45CSR§30-5.1.c., 40CFR§64.7(b)]
5.2.7., [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.3 Testing Requirements

5.3.1. **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1. **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of the Fiber Line Press (PV)

Fiber mats are conveyed off of the Fiber Line, stacked into a loader, and loaded into a steam heated eight-opening press. The press contains steel dies with the desired door skin patterns in relief. Once all of the platens of the press are full, the press consolidates the resinated fiber under heat and pressure. The door skins are pressed until the resin has cured. The press opens and the door skins are unloaded.

Air emissions from the press are captured in a permanent total enclosure meeting the requirements of EPA Method 204 and exhausted to the Press Vent Baghouse (BH6) to control Particulate emissions. The Baghouse (BH6) exhaust is vented into the Fiber Dryer (D1) intake. The Fiber Dryer (D1) is exhausted to the Dryer Cyclone (C1) and then to three Fiber Dryer Baghouses (BH1a, BH1b, & BH1c) to control Particulate emissions from the Dryer (D1). The exhaust from the three Fiber Dryer Baghouses (BH1a, BH1b, & BH1c) is vented into the Biofilter (BF).

Potential press emissions are calculated using the maximum hourly and annual press throughput (25,139 ft2/hr and 188,668,062 ft2/yr – 1/8" basis) multiplied by the emission factors based on source testing conducted on the uncontrolled emission source and the Biofilter (BF) control efficiency provided by the manufacturer.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
PV	Press Vents	BH6, BH1a, BH1b, BH1c, BF

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Steam heated 5ft x8ft, eight-opening press used to consolidate wood fiber mats.

See attached process description

Manufacturer:	**Model number:**	**Serial number:**
COE Manufacturing	Steam heated eight-opening press	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

25,139 lb/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
22,671 ft2/hr – 1/8" basis	188,668,062 ft2/hr – 1/8" basis	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----(1)	----(1)
Nitrogen Oxides (NO_X)	----(1)	----(1)
Lead (Pb)	----(1)	----(1)
Particulate Matter ($PM_{2.5}$)	----(1)	----(1)
Particulate Matter (PM_{10})	----(1)	----(1)
Total Particulate Matter (TSP)	----(1)	----(1)
Sulfur Dioxide (SO_2)	----(1)	----(1)
Volatile Organic Compounds (VOC)	----(1)	----(1)
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	----(1)	----(1)
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Tables 7&9 Press is controlled by the Press Vent Baghouse (B6), Dryer Baghouses (BH1a, BH1b, BH1c) and Biofilter (BF).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.3., **[45CSR13 – Permit R13-2192 §4.1.3.]**
5.1.6., [45CSR13 – Permit R13-2192 §4.1.6.; 45CSR§7-4.1]
5.1.14., [45CSR13 – Permit R13-2192 §4.1.21., 45CSR§13-5.10.]
5.1.15., **[45CSR §7-3.1.]**
5.1.18., 45CSR §7-9.1.]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.2 Monitoring Requirements

5.2.5., [45CSR§30-5.1.c., 40CFR§64.7(b)]
5.2.6., [45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7., [45CSR§30-5.1.c., 40CFR§64.7(e)]

5.3 Testing Requirements

5.3.1., **[45CSR§7A-2.1., 45CSR§30-5.1.c., 40CFR§64.6(c) & §64.7(d)]**

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1., **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.2., **[45CSR13 – Permit R13-2192 §4.3.2.]**
5.4.3., **[45CSR13 – Permit R13-2192 §4.3.3.]**
5.4.5., **[45CSR13 – Permit R13-2192 §4.3.5.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
RS	Rotary Classifier	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

The rotary classifier removes large pieces of wood furnish from green wood chips prior to the conveyor to the furnish storage silos

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** None

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):
40 tons/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
18.4 tons/hr (total)	151,974 tons/yr (total)	8,278 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	Insignificant	Insignificant
Particulate Matter (PM_{10})	Insignificant	Insignificant
Total Particulate Matter (TSP)	Insignificant	Insignificant
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	----	----
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

Emissions are believed to be insignificant.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

NA

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

NA

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
RV	Rotary Valve	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Rotary valve is associated with the wood chip refining process.

Manufacturer:	**Model number:**	**Serial number:**
Unknown		

Construction date:	**Installation date:**	**Modification date(s):**
1997	05/01/1998	NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
25,141 OD- lbs/hr	49,879 ODT/yr	8,322 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.62	1.22
Particulate Matter (PM_{10})	0.62	1.22
Total Particulate Matter (TSP)	2.46	4.89
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	0.85	1.68
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Total HAP	0.56(1)	1.12(1)
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) For individual HAP See Attachment J, Table 8.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.7., [45CSR13 – Permit R13-2192 §4.1.9.; 45CSR§7-4.1]
5.1.15 **[45CSR §7-3.1.]**
5.1.18., [45CSR §7-9.1.]

5.2 Monitoring Requirements

5.2.6., [45CSR§30-5.1.c., 40CFR§64.7(c)]
5.2.7., 45CSR§30-5.1.c., 40CFR§64.7(e)]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.4 Recordkeeping Requirements

3.4.1 & 5.4.1., **[45CSR§30-5.1.c.2.A., 45CSR13 – Permit R13-2192 §4.3.1]**
5.4.3., **[45CSR13 – Permit R13-2192 §4.3.3.]**

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
ST1	Resin Storage Tank #1	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Resin Tank #1 stores MDI resin for use in the door skin manufacturing process.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

7,000 gallons

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
		8,760 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----	----
Particulate Matter (PM_{10})	----	----
Total Particulate Matter (TSP)	----	----
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	Insignificant	Insignificant
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	Insignificant	Insignificant
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

Emissions are believed to be insignificant.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

NA

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

NA

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
ST2	Resin Storage Tank #2	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Resin Tank #2 stores MDI resin for use in the door skin manufacturing process.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

7,000 gallons

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
		8,760 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----	----
Particulate Matter (PM_{10})	----	----
Total Particulate Matter (TSP)	----	----
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	Insignificant	Insignificant
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	Insignificant	Insignificant
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

Emissions are believed to be insignificant.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

NA

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

NA

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
ST3	Wax Storage Tank	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Wax Tank stores wax for use in the door skin manufacturing process.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** None

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

10,000 gallons

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
		8760 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----	----
Particulate Matter (PM_{10})	----	----
Total Particulate Matter (TSP)	----	----
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	Insignificant	Insignificant
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	Insignificant	Insignificant
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

Emissions are believed to be insignificant.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

NA

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

NA

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
ST7	Coating Storage Tank	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Coating Storage Tank stores polymer for use in the manufacturing process.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1999	**Modification date(s):** None

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

10,000 gallons

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
		8760 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----	----
Particulate Matter (PM_{10})	----	----
Total Particulate Matter (TSP)	----	----
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	Insignificant	Insignificant
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	Insignificant	Insignificant
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

Emissions are believed to be insignificant.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

NA

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

NA

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
ST8	Coating Storage Tank	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Coating Storage Tank stores additives for use in the manufacturing process.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1999	**Modification date(s):** None

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

10,000 gallons

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
		8760 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	----	----
Particulate Matter (PM_{10})	----	----
Total Particulate Matter (TSP)	----	----
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	Insignificant	Insignificant
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	Insignificant	Insignificant
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

Emissions are believed to be insignificant.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

NA

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

NA

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Description of the Truck Dump (TD)

The Truck Dump is a receiving bin for wet green poplar chips used in the door skin manufacturing process and wood residuals for combustion in the Hogged Fuel-Fired Boiler (B1) with a total maximum hourly throughput of 39,303 BD lbs/hr. Fugitive particulate emissions from the Truck Dump (TD) are estimated based on a particle size analysis of plytrim from a similar source multiplied by the potential hourly and annual material throughput.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
TD	Truck Dump	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

See enclosed process description.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: 1997	**Installation date:** 05/01/1998	**Modification date(s):** NA

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

NA

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
39,303 BD-lbs/hr (combined)	63,618 BDT/yr (combined)	8,278 hrs/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☒ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	----	----
Nitrogen Oxides (NO_X)	----	----
Lead (Pb)	----	----
Particulate Matter ($PM_{2.5}$)	0.84	1.4
Particulate Matter (PM_{10})	0.84	1.4
Total Particulate Matter (TSP)	3.34	5.4
Sulfur Dioxide (SO_2)	----	----
Volatile Organic Compounds (VOC)	Insignificant	Insignificant
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	Insignificant	Insignificant
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Notes:

(1) See Attachment J, Table 6.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

See Title V Operating Permit R30-06700095-2019 (MM01) Condition Nos.

5.0 Source-Specific Requirements

5.1 Limitations and Standards

5.1.15 **[45CSR §7-3.1.]**

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

NA

Are you in compliance with all applicable requirements for this emission unit? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH1a	**List all emission units associated with this control device.** Press Vents (PV), Fiber Dryer (D1), Dryer Cyclone (C1)	
Manufacturer: Clarkes' Sheet Metal	**Model number:** 1-100-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.95%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 6,451 SF total cloth area
- 6.97:1 ft/min operating air to cloth ratio
- Average ACFM:34,000 @ 160^{o}F
- Continuous operation

Is this device subject to the CAM requirements of 40 C.F.R. 64? __ Yes ___ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform monthly visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH1b	**List all emission units associated with this control device.** Press Vents (PV), Fiber Dryer (D1), Dryer Cyclone (C1)	
Manufacturer: Clarkes' Sheet Metal	**Model number:** 1-100-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.95%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 6,451 SF total cloth area
- 6.97:1 ft/min operating air to cloth ratio.
- Average ACFM: 34,000 @ 160^{o}F
- Continuous operation

Is this device subject to the CAM requirements of 40 C.F.R. 64? __ Yes ___ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform month visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH1c	**List all emission units associated with this control device.** Press Vents (PV), Fiber Dryer (D1), Dryer Cyclone (C1)	
Manufacturer: Clarkes' Sheet Metal	**Model number:** 1-100-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.95%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 6,451 SF total cloth area
- 6.97:1 ft/min operating air to cloth ratio.
- Average ACFM: 34,000 @ 160^{o}F
- Continuous operation

Is this device subject to the CAM requirements of 40 C.F.R. 64? __ Yes ___ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform monthly visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH2 (Former Baghouse)	**List all emission units associated with this control device.** Fiber line prior to the press (FLa)	
Manufacturer: Clarkes' Sheet Metal	**Model number:** P38-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.90%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 2,527 SF total cloth area
- 9.14:1 ft/min operating air to cloth ratio
- Average ACFM: 23,100 @ 160^{o}F
- Continuous operation

Is this device subject to the CAM requirements of 40 C.F.R. 64? __ Yes ___ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform monthly visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH3	**List all emission units associated with this control device.** Fiber line prior to the press (FLa), North Fuel Storage Silo (FLSN), South Fuel Storage Silo (FLSS), C2, C3, C4, C6	
Manufacturer: Clarkes' Sheet Metal	**Model number:** 1-100-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.90%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 6,451 SF total cloth area
- 6.97:1 ft/min operating air to cloth ratio
- Average ACFM: 34,000 @ 160^{o}F
- Continuous operation

Is this device subject to the CAM requirements of 40 C.F.R. 64? __ Yes ___ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform monthly visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH4 (Sizer Baghouse)	**List all emission units associated with this control device.** Fiber line after the press (FLb), Chip Cleaning Cyclone (C5)	
Manufacturer: Clarkes' Sheet Metal	**Model number:** P57-20	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.95%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 4,548 SF total cloth area
- 7.03:1 ft/min operating air to cloth ratio
- Average ACFM: 32,000 @ 160^{o}F
- Continuous operation

Is this device subject to the CAM requirements of 40 C.F.R. 64? __ Yes _X_ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will perform monthly visible emissions inspections and internal baghouse inspections at least quarterly. The facility will also record the quantity of material throughput to the baghouses monthly and annually.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH5	**List all emission units associated with this control device.** Paint Manufacturing (DC2)	
Manufacturer: Donaldson Filtration Systems	**Model number:** DLMC 1.2.15	**Installation date:** 04/01/1999

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.9%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 323 SF total cloth area
- 9.3:1 ft/min operating air to cloth ratio.
- Average ACFM: 3,000 @ 160^{o}F

Is this device subject to the CAM requirements of 40 C.F.R. 64? _ _ Yes _X_ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.** The baghouse is a fugitive emissions source that vents inside the building.

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will record the quantity of material used in coatings manufacturing and monitor the visible emissions during operation. The dust collector vents inside of the building in the coatings manufacturing area. Employees know immediately if there are visible emissions from the baghouse.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BH6	**List all emission units associated with this control device.** Press Vents (PV)	
Manufacturer: Clarkes' Sheet Metal	**Model number:** 1-100-20	**Installation date:** 08/28/2013

Type of Air Pollution Control Device:

_X_ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	100%	99.90%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Polypropylene bags
- 6,451 SF total cloth area
- 6.97:1 ft/min operating air to cloth ratio
- Average ACFM: 83,333 @ 160°F
- Continuous operation

Is this device subject to the CAM requirements of 40 C.F.R. 64? __ Yes _X_ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The baghouse does not vent to atmosphere and is routed through other processes subsequently prior to ultimate venting through the biofilter (E18)

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: ESP	**List all emission units associated with this control device.** Hogged fuel-fired boiler (B1)	
Manufacturer: Wellons	**Model number:** 2W-091-1119	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

___ Baghouse/Fabric Filter	___ Venturi Scrubber	___ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		_X_ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	80%	80%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Gas Flow Rate = 32,000 acfm @ 350^{o}F
- Gas velocity through the precipitator = 2.60 ft/sec
- 24 Opzel plate collecting electrodes
- 7,246 SF of active collecting surface
- 132 rigid discharge electrodes.

Is this device subject to the CAM requirements of 40 C.F.R. 64? _X_ Yes ___ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will monitor visible emissions continuously using a COMS (not to exceed 10%, six-minute average).

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: MC	**List all emission units associated with this control device.** Hogged fuel-fired boiler (B1)	
Manufacturer: Wellons	**Model number:** 2W-091-1119	**Installation date:** 05/01/1998

Type of Air Pollution Control Device:

___ Baghouse/Fabric Filter	___ Venturi Scrubber	_X_ Multiclone
___ Carbon Bed Adsorber	___ Packed Tower Scrubber	___ Single Cyclone
___ Carbon Drum(s)	___ Other Wet Scrubber	___ Cyclone Bank
___ Catalytic Incinerator	___ Condenser	___ Settling Chamber
___ Thermal Incinerator	___ Flare	___ Other (describe) _____
___ Wet Plate Electrostatic Precipitator		___ Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
Particulate Matter	94%	85%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

- Cone Length = 9.56 inches
- Pressure drop across system = 3 inches H20.
- Number of tubes = 66
- Tube diameter = 8.125
- Tube length = 20.72

Is this device subject to the CAM requirements of 40 C.F.R. 64? __ Yes _X__ No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification. MC vents through ESP. Reference CAM Plan for ESP (Attachment H).**

Describe the parameters monitored and/or methods used to indicate performance of this control device.

The facility will monitor visible emissions continuously using a COMS (not to exceed 10%, six-minute average).

ATTACHMENT H: COMPLIANCE ASSURANCE MONITORING PLAN FORMS

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

For definitions and information about the CAM rule, please refer to 40 CFR Part 64. Additional information (including guidance documents) may also be found at http://www.epa.gov/ttn/emc/cam.html

CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to **EACH** regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet **all** of the following criteria (*If No, then the remainder of this form need not be completed*): ☒ YES ☐ NO

a. The PSEU is located at a major source that is required to obtain a Title V permit;

b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is NOT exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
- Stratospheric Ozone Protection Requirements.
- Acid Rain Program Requirements.
- Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
- An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).

c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;

d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND

e. The PSEU is NOT an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

☒ RENEWAL APPLICATION. **ALL** PSEUs for which a CAM plan has NOT yet been approved need to be addressed in this CAM plan submittal.

☐ INITIAL APPLICATION (submitted after 4/20/98). **ONLY** large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.

☐ SIGNIFICANT MODIFICATION TO LARGE PSEUs. **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, Only address the appropriate monitoring requirements affected by the significant modification.

3) [a] BACKGROUND DATA AND INFORMATION					
Complete the following table for **all** PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU In order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.					
PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	[b] EMISSION LIMITATION or STANDARD	[c] MONITORING REQUIREMENT
Hogged Fuel-Fired Boiler (B1)	Wood Combustion	PM/PM10/ PM 2.5	ESP	45 CSR § 2-3.1; 45 CSR § 2-3.2; 45 CSR § 2-4.1.b; 45 CSR § 2-4.2; 45 CSR § 2-5.1; 45 CSR § 2-9.1	Opacity; secondary voltage; inspection
EXAMPLE Boiler No. 1	Wood-Fired Boiler	PM	Multiclone	45CSR§2-4.1.c.; 9.0 lb/hr	Monitor pressure drop across multiclone: Weekly inspection of multiclone

[a] If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

[b] Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

[c] Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

CAM MONITORING APPROACH CRITERIA

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for EACH indicator selected for EACH PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. if more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.

4a) PSEU Designation: Hogged Fuel-Fired Boiler (B1)	**4b) Pollutant:** PM/PM10/ PM 2.5	**4c) [a] Indicator No. 1:** Opacity	**4d) [a] Indicator No. 2:** Secondary Voltage
5a) GENERAL CRITERIA Describe the MONITORING APPROACH used to measure the indicators:			
[b] Establish the appropriate INDICATOR RANGE or the procedures for establishing the indicator range which provides a reasonable assurance of compliance:		0-10% Opacity	28 - 55 Kilovolts 0 - 250 milliamps
5b) PERFORMANCE CRITERIA Provide the SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA, such as detector location, installation specifications, and minimum acceptable accuracy:		Continous Opacity Monitor (COMS)	Check voltage for irregularities outside normal operting range as per manufacturer's recommendation
[c] For new or modified monitoring equipment, provide VERIFICATION PROCEDURES, including manufacturer's recommendations, TO CONFIRM THE OPERATIONAL STATUS of the monitoring:		NA	NA
Provide QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.):		Calibrate the COMS based on manufacturer's recommendations	NA
[d] Provide the MONITORING FREQUENCY:		Continuous	Daily checks
Provide the DATA COLLECTION PROCEDURES that will be used:		Daily check of the COMS, as per manufacturer's recommendation	Manually record results of inspection
Provide the DATA AVERAGING PERIOD for the purpose of determining whether an excursion or exceedance has occurred:		NA	NA

[a] Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

[b] Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

[c] The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

[d] Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

CAM MONITORING APPROACH CRITERIA

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for EACH indicator selected for EACH PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. if more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.

4a) PSEU Designation: Hogged Fuel-Fired Boiler (B1)	**4b) Pollutant:** PM/PM10/ PM 2.5	**4c) [a] Indicator No. 1:** Inspections	**4d) [a] Indicator No. 2:**
5a) GENERAL CRITERIA Describe the MONITORING APPROACH used to measure the indicators:			
[b] Establish the appropriate INDICATOR RANGE or the procedures for establishing the indicator range which provides a reasonable assurance of compliance:		Inspect for missing or worn parts	
5b) PERFORMANCE CRITERIA Provide the SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA, such as detector location, installation specifications, and minimum acceptable accuracy:		Manufacturer's design	
[c] For new or modified monitoring equipment, provide VERIFICATION PROCEDURES, including manufacturer's recommendations, TO CONFIRM THE OPERATIONAL STATUS of the monitoring:		NA	
Provide QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.):		NA	
[d] Provide the MONITORING FREQUENCY:		At least semi-annually according to manufacturer's recommendation.	
Provide the DATA COLLECTION PROCEDURES that will be used:		Manually record inspection results and any repairs made.	
Provide the DATA AVERAGING PERIOD for the purpose of determining whether an excursion or exceedance has occurred:		NA	

[a] Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

[b] Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

[c] The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

[d] Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

Table 1
Production and Process Rates
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Source	Maximum Rates				
	Hourly			Annual	
Maximum Production					
Fiber Dryer Throughput	25,139	BD-lbs	(1)	49,875	BDT
Door Skins	22,671	SF-1/8"	(c)	188,668,062	SF-1/8"
Hogged Door Skins	11,336	SF-1/8"	(2)	28,300,209	SF-1/8"
Maximum Combustion Sources					
Wood-Fired Boiler - Combustion	62.5	MMBtu	(3)	546,131	MMBtu
Wood-Fired Boiler - Fuel Usage	7,805	BD-lbs	(f)	34,099	BDT
Natural Gas Boiler	37.7	MMBtu	(3)	329,426	MMBtu
Natural Gas Furnish Dryer	20.0	MMBtu	(3)	174,762	MMBtu
Primeline Oven #1	1.4	MMBtu	(3)	12,233	MMBtu
Primeline Oven #3	2.4	MMBtu	(3)	20,971	MMBtu
Maximum Truck Dump Throughput					
Purchased Furnish	36,718	BD-lbs	(g)	52,383	BDT
Purchased Wood Fuel	2,585	BD-lbs	(i)	11,235	BDT
Maximum Raw Material Throughput					
Primer Usage	74.6	gallons	(k)	561,287	gallons
Maximum Hours of Operation					
Facility Hours		--		8,322	hours
Truck Dump Hours		--		8,278	hours

JELD-WEN WINDOWS & DOORS

Table 2

Wood-Fired Boiler (B1 - E5) Criteria Pollutant Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MMBtu)		Maximum Emissions (1)	
			lbs/hr (a)	tons/yr (b)
TSP	1.64E-02	(2)	1.03	4.49
PM10	1.64E-02	(3)	1.03	4.49
PM 2.5	1.64E-02	(7)	1.03	4.49
SO2	2.50E-02	(4)	1.56	6.83
CO	3.24E-01	(2)	20.25	88.49
NOx	5.32E-01	(2)	33.24	145.22
VOC	1.73E-02	(2)	1.08	4.74
Lead	4.80E-05	(4)	0.003	0.01
N_2O	9.26E-03	(5)	0.58	2.53
CH_4	7.05E-02	(5)	4.41	19.26
CO_2	207	(5)	12,925	56468.16

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly boiler combustion [MMBtu/hr]) x (emission factor [lbs/MMBtu])

Maximum hourly boiler combustion [MMBtu/hr] = 62.5 (6)

(b) Maximum annual emissions (tons/yr) = (maximum annual boiler combustion [MMBtu/yr]) x (emission factor [lbs/MMBtu]) / (2000 lbs/ton)

Maximum annual boiler combustion [MMBtu/yr] = 546,131 (6)

Notes:

(1) All emission estimates include the effect of applied control devices.

(2) Emission factors were taken from a source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia facility in April 2003. Two standard deviations were added to the results as a safety factor.

(3) Calculations assume that 100% of TSP is PM_{10}.

(4) Emission factors were taken from AP-42, Chapter 1.6, Wood Residue Combustion (9/2003).

(5) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

(6) See Table 1, Production and Process Rates.

(7) Calculations assume that 100% of TSP is PM2.5

JELD-WEN WINDOWS & DOORS

Table 3

Wood-Fired Boiler (B1 - E5) HAP Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMBtu)		Maximum Emissions	
			lbs/hr [(a)]	tons/yr [(b)]
1,1,1-Trichloroethane	3.1E-05	(1)	1.9E-03	8.5E-03
1,2-Dichloroethane	2.9E-05	(1)	1.8E-03	7.9E-03
1,2-Dichloropropane	3.3E-05	(1)	2.1E-03	9.0E-03
2,4-Dinitrophenol	1.8E-07	(1)	1.1E-05	4.9E-05
4-Nitrophenol	1.1E-07	(1)	6.9E-06	3.0E-05
Acenaphthene	9.1E-07	(1)	5.7E-05	2.5E-04
Acenaphthylene	5.0E-06	(1)	3.1E-04	1.4E-03
Acetaldehyde	8.3E-04	(1)	5.2E-02	2.3E-01
Acetophenone	3.2E-09	(1)	2.0E-07	8.7E-07
Acrolein	4.0E-03	(1)	2.5E-01	1.1E+00
Anthracene	3.0E-06	(1)	1.9E-04	8.2E-04
Antimony	7.9E-06	(2)	4.9E-04	2.2E-03
Arsenic	2.2E-05	(2)	1.4E-03	6.0E-03
Benz(a)anthracene	6.5E-08	(1)	4.1E-06	1.8E-05
Benzene	4.2E-03	(1)	2.6E-01	1.1
Benzo(a)pyrene	2.6E-06	(1)	1.6E-04	7.1E-04
Benzo(b)fluoranthene	1.0E-07	(1)	6.3E-06	2.7E-05
Benzo(g,h,i)perylene	9.3E-08	(1)	5.8E-06	2.5E-05
Benzo(k)fluoranthene	3.6E-08	(1)	2.3E-06	9.8E-06
Beryllium	1.1E-06	(2)	6.9E-05	3.0E-04
bis(2-Ethylhexyl)phthalate	4.7E-08	(1)	2.9E-06	1.3E-05
Bromomethane	1.5E-05	(1)	9.4E-04	4.1E-03
Cadmium	4.1E-06	(2)	2.6E-04	1.1E-03
Carbon tetrachloride	4.5E-05	(1)	2.8E-03	1.2E-02
Chlorine	7.9E-04	(1)	4.9E-02	2.2E-01
Chlorobenzene	3.3E-05	(1)	2.1E-03	9.0E-03
Chloroform	2.8E-05	(1)	1.8E-03	7.6E-03
Chloromethane	2.3E-05	(1)	1.4E-03	6.3E-03
Chromium (total)	2.1E-05	(2)	1.3E-03	5.7E-03
Chrysene	3.8E-08	(1)	2.4E-06	1.0E-05
Cobalt	6.5E-06	(2)	4.1E-04	1.8E-03
Dibenzo(a,h)anthracene	9.1E-09	(1)	5.7E-07	2.5E-06
Dichloromethane	2.9E-04	(1)	1.8E-02	7.9E-02
Ethylbenzene	3.1E-05	(1)	1.9E-03	8.5E-03
Fluoranthene	1.6E-06	(1)	1.0E-04	4.4E-04
Fluorene	3.4E-06	(1)	2.1E-04	9.3E-04
Formaldehyde	4.4E-03	(1)	2.8E-01	1.2
Hydrogen chloride	1.9E-02	(1)	1.2	5.2
Indeno(1,2,3,c,d)pyrene	8.7E-08	(1)	5.4E-06	2.4E-05

JELD-WEN WINDOWS & DOORS

Table 3
Wood-Fired Boiler (B1 - E5) HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMBtu)		Maximum Emissions	
			lbs/hr [(a)]	tons/yr [(b)]
Manganese	1.6E-03	(2)	1.0E-01	4.4E-01
Mercury	3.5E-06	(2)	2.2E-04	9.6E-04
Naphthalene	9.7E-05	(1)	6.1E-03	2.6E-02
Nickel	3.3E-05	(2)	2.1E-03	9.0E-03
Pentachlorophenol	5.1E-08	(1)	3.2E-06	1.4E-05
Phenanthrene	7.0E-06	(1)	4.4E-04	1.9E-03
Phenol	5.1E-05	(1)	3.2E-03	1.4E-02
Polychlorinated biphenyls	8.1E-09	(1)	5.1E-07	2.2E-06
Polychlorinated dioxins	1.7E-06	(1)	1.0E-04	4.6E-04
Polychlorinated furans	1.9E-09	(1)	1.2E-07	5.1E-07
Propionaldehyde	6.1E-05	(1)	3.8E-03	1.7E-02
Pyrene	3.7E-06	(1)	2.3E-04	1.0E-03
Selenium	2.8E-06	(2)	1.8E-04	7.6E-04
Styrene	1.9E-03	(1)	1.2E-01	0.52
Tetrachloroethylene	3.8E-05	(1)	2.4E-03	1.0E-02
Toluene	9.2E-04	(1)	5.8E-02	2.5E-01
Trichloroethylene	3.0E-05	(1)	1.9E-03	8.2E-03
Vinyl chloride	1.8E-05	(1)	1.1E-03	4.9E-03
Xylenes	2.5E-05	(1)	1.6E-03	6.8E-03
	Total HAPs		2.42	10.55

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly boiler combustion [MMBtu/hr]) x (emission factor [lbs/MMBtu])

Maximum hourly boiler combustion [MMBtu/hr] = 62.5 (3)

(b) Maximum annual emissions (tons/yr) = (maximum annual boiler combustion [MMBtu/yr]) x (emission factor [lbs/MMBtu]) / (2000 lbs/ton)

Maximum annual boiler combustion [MMBtu/yr] = 546,131 (3)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.6, Table 1.6-3, Emission Factors for Speciated Organic Compounds from Wood Residue Combustion (September 2003).

(2) Emission factors were taken from AP-42, Chapter 1.6, Table 1.6-4, Emission Factors for Trace Elements from Wood Residue Combustion (September 2003).

(3) See Table 1, Production and Process Rates.

JELD-WEN WINDOWS & DOORS

Table 4

Natural Gas-Fired Boiler (B2 - E6) Criteria Pollutant Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [(a)]	tons/yr [(b)]
TSP	7.6	(1)	0.27	1.16
PM10	5.7	(2)	0.20	0.87
PM 2.5	1.9	(2)	0.07	0.29
SO2	0.6	(1)	0.02	0.09
CO	0.7	(3)	0.02	0.11
NOx	170	(3)	5.97	26.07
VOC	5.5	(1)	0.19	0.84
Lead	5.0E-04	(1)	1.75E-05	0.00008
N_2O	2.68E-04	(4)	0.01	0.04
CH_4	2.68E-03	(4)	0.10	0.44
CO_2	142	(4)	5,353	23,389.14

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly boiler combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly boiler combustion [MMBtu/hr] = 37.7 (5)

Natural gas heating value [MMBtu/MMscf] = 1,077 (6)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual boiler combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual boiler combustion [MMBtu/yr] = 329,426 (5)

Natural gas heating value [MMBtu/MMscf] = 1,077 (6)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Natural Gas Combustion (7/1998).

(2) Emission factor taken from AP-42, Chapter 1.4, Natural Gas Combustion. PM10= Condensable, PM2.5 = Filterable

(3) Emission factors were taken from an engineering source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia facility in April 2003.

The emission factors are equal to the average of the test values plus two standard deviations.

(4) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

(5) See Table 1, Production and Process Rates.

(6) Provided by Dominon Hope Natural Gas.

JELD-WEN WINDOWS & DOORS

Table 5
Natural Gas-Fired Boiler (B2 - E6) HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [a]	tons/yr [b]
Acenaphthene	1.8E-06	(1)	6.3E-08	2.8E-07
Acenaphthylene	1.8E-06	(1)	6.3E-08	2.8E-07
Anthracene	2.4E-06	(1)	8.4E-08	3.7E-07
Arsenic	2.0E-04	(2)	7.0E-06	3.1E-05
Benz(a)anthracene	1.8E-06	(1)	6.3E-08	2.8E-07
Benzene	2.1E-03	(1)	7.4E-05	3.2E-04
Benzo(a)pyrene	1.2E-06	(1)	4.2E-08	1.8E-07
Benzo(b)fluoranthene	1.8E-06	(1)	6.3E-08	2.8E-07
Benzo(g,h,i)perylene	1.2E-06	(1)	4.2E-08	1.8E-07
Benzo(k)fluoranthene	1.8E-06	(1)	6.3E-08	2.8E-07
Beryllium	1.2E-05	(2)	4.2E-07	1.8E-06
Cadmium	1.1E-03	(2)	3.9E-05	1.7E-04
Chromium (total)	1.4E-03	(2)	4.9E-05	2.1E-04
Chrysene	1.8E-06	(1)	6.3E-08	2.8E-07
Cobalt	8.4E-05	(2)	2.9E-06	1.3E-05
Dibenzo(a,h)anthracene	1.2E-06	(1)	4.2E-08	1.8E-07
Fluoranthene	3.0E-06	(1)	1.1E-07	4.6E-07
Fluorene	2.8E-06	(1)	9.8E-08	4.3E-07
Formaldehyde	7.5E-02	(1)	2.6E-03	1.1E-02
Hexane	1.8E+00	(1)	6.3E-02	2.8E-01
Indeno(1,2,3,c,d)pyrene	1.8E-06	(1)	6.3E-08	2.8E-07
Manganese	3.8E-04	(2)	1.3E-05	5.8E-05
Mercury	2.6E-04	(2)	9.1E-06	4.0E-05
Naphthalene	6.1E-04	(1)	2.1E-05	9.3E-05
Nickel	2.1E-03	(2)	7.4E-05	3.2E-04
Phenanthrene	1.7E-05	(1)	6.0E-07	2.6E-06
Pyrene	5.0E-06	(1)	1.8E-07	7.6E-07
Selenium	2.4E-05	(2)	8.4E-07	3.7E-06

Table 5
Natural Gas-Fired Boiler (B2 - E6) HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [(a)]	tons/yr [(b)]
Toluene	3.4E-03	(1)	1.2E-04	5.2E-04
2-Methylnaphthalene	2.4E-05	(1)	8.4E-07	3.7E-06
3-Methylchloranthrene	1.8E-06	(1)	6.3E-08	2.8E-07
Dichlorobenzene	1.2E-03	(1)	4.2E-05	1.8E-04
7,12-Dimethylbenz(a)anthracene	1.6E-05	(1)	5.6E-07	2.4E-06
	Total HAPs		0.07	0.29

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly boiler combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly boiler combustion [MMBtu/hr] = 37.7 (3)

Natural gas heating value [MMBtu/MMscf] = 1,077 (4)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual boiler combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual boiler combustion [MMBtu/yr] = 329,426 (3)

Natural gas heating value [MMBtu/MMscf] = 1,077 (4)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-3, Emission Factors for Speciated Organic Compounds from Natural Gas Combustion (July 1998).

(2) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-4, Emission Factors for Metals from Natural Gas Combustion (July 1998).

(3) See Table 1, Production and Process Rates.

(4) Provided by Dominon Hope Natural Gas.

JELD-WEN WINDOWS & DOORS

Table 6
Truck Dump (TD) Fugitive Particulate Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Pollutant	Fraction of Material (1) (%)	Maximum Emissions	
			lbs/hr (a)	tons/yr (b)
Truck Dump (TD)	TSP	0.0085%	3.34	5.4
	PM10	0.0021%	0.84	1.4
	PM 2.5	0.0021%	0.84	1.4
East Furnish Silo (FSE)	TSP	0.0085%	1.56	2.2
	PM10	0.0021%	0.39	0.6
	PM 2.5	0.0021%	0.39	0.6
West Furnish Silo (FSW)	TSP	0.0085%	1.56	2.2
	PM10	0.0021%	0.39	0.56
	PM 2.5	0.0021%	0.39	0.56
		Total TSP	6.46	9.9
		Total PM10/PM2.5	1.62	4.9

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly truck dump throughput [BD-lb/hr]) x (fraction of material [%])

Maximum hourly truck dump throughput [BD-lb/hr] = 39,303 (2)

Maximum hourly east furnish silo throughput [BD-lb/hr] = 18,359 (3)

Maximum hourly west furnish silo throughput [BD-lb/hr] = 18,359 (3)

(b) Maximum annual emissions (tons/yr) = (maximum annual truck dump throughput [BDT/yr]) x (fraction of material [%])

Maximum annual truck dump throughput [BDT/yr] = 63,618 (2)

Maximum annual east furnish silo throughput [BDT/yr] = 26,192 (3)

Maximum annual west furnish silo throughput [BDT/yr] = 26,192 (3)

Notes:

Based on a particle size analysis of plytrim. Material less than 150 microns in diameter was conservatively assumed to be TSP. The PM_{10} emissions were assumed to be 25% of the TSP emissions.The PM2.5 emissions were assumed to be 25% of the TSP emissions.

See Table 1, Production and Process Rates. Sum of the furnish and wood fuel truck dump throughputs.

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JELD-WEN WINDOWS & DOORS

Biofilter (BF-E18) Estimated Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor		Maximum Estimated Biofilter Outlet Emissions			
	lbs/hr	tons/yr	lbs/hr [(a)]		tons/yr [(b)]	
TSP	0.18	0.35	0.18	(a)	0.35	(b)
PM10	0.18	0.35	0.18	(a)	0.35	(b)
PM 2.5	0.18	0.35	0.18	(a)	0.35	(b)
VOC	32.17	71.23	30.57	(c)	67.67	(d)
CO	1.69	7.35	1.69	(a)	7.35	(b)
NOx	1.97	8.59	1.97	(a)	8.59	(b)
	(lbs/MSF-1/8")[(3)]					
Acetaldehyde	0.00156		0.04	(a)	0.15	(b)
Acrolein	0.00079		0.02	(a)	0.07	(b)
Benzene	0.00070		0.02	(a)	0.07	(b)
Formaldehyde	0.00172		0.04	(a)	0.16	(b)
Methanol	0.01018		0.23	(a)	0.96	(b)
Phenol	0.00756		0.17	(a)	0.71	(b)
Propionaldehyde	0.00124		0.03	(a)	0.12	(b)
MDI	0.00003		0.001	(a)	0.00	(b)
HAPs from NG Burner			0.03		0.15	
		Total HAP	0.54		2.2	

Calculations:

(a) Maximum hourly emissions at biofilter oulet (lbs/hr) = (maximum hourly emissions at biofilter inlet [lbs/hr]) x (1 - pollutant control efficiency [%])

(b) Maximum annual emissions at biofilter outlet (tons/yr) = (maximum annual emissions at biofilter inlet [tons/yr]) x (1 - pollutant control efficiency [%])

biofilter VOC control efficiency [%] =	5%	(2)
Methanol & Formaldehyde control efficiency [%] =	90%	(2)
Other HAP control efficiency [%] =	0%	(2)
biofilter TSP/PM10 control efficiency [%] =	0%	(2)

(c) Maximum hourly VOC emissions at biofilter oulet (lbs/hr) = (VOC emissions at inlet [lbs/hr]) * (1 - VOC control efficiency [%])

(d) Maximum hourly VOC emissions at biofilter oulet (tons/yr) = (VOC emissions at inlet [tons/yr]) * (1 - VOC control efficiency [%])

Notes:

(1) See Tables 7a - 7d and Table 9, *Non-detects were assumed at the detection level and are represented in italics*

(2) Provided by MET-PRO, biofilter manufacturer.
For conservacy, JELD-WEN is using 5% VOC control efficiency rather than the estimated 10% control efficiency provide by MET-PRO.

(3) Emissions factors derived from average of 2014, 2016, 2018, & 2019 Performance Tests including 2X

Table 7a
Press Vents Emissions TO BIOFILTER
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MSF-1/8")		Maximum Uncontrolled Emissions **TO BIOFILTER**	
			lbs/hr [(a)]	tons/yr [(b)]
TSP / PM10 / PM2.5	0.042	(1)	9.50E-04	3.95E-03
VOC	0.145	(2)	3.29	13.68
CO	0.006	(3)	0.13	0.54
NOx	0.005	(3)	0.11	0.47

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly door skin production [MSF-1/8"/hr]) x (emission factor [lbs/MSF-1/8"]) x (1-baghouse TSP/PM10 control efficiency)

Maximum hourly door skin production [MSF-1/8"/hr] = 22.67 (4)

Press Vent baghouse TSP/PM10 control efficiency [%] = 99.90% (5)

(b) Maximum annual emissions (tons/yr) = (annual door skin production [MSF-1/8"/yr]) x (emission factor [lbs/MSF-1/8"]) x (1-baghouse TSP/PM10 control efficiency) / (2000 lbs/ton)

Maximum annual door skin production [MSF-1/8"/yr] = 188,668.1 (4)

Notes:

(1) Emission factors were taken from an engineering source test performed at the JELD-WEN, Wood Fiber Division - Craigsville, West Virginia facility in April 2003. Calculations assume that 100% of TSP is PM_{10} / $PM_{2.5}$.

(2) Emission factors were taken from AP-42, Chapter 10.6.3, Table 10.6.3-6, Medium Density Fiberboard Manufacturing (expressed as VOC as methane). This factor includes the emissions of some HAPs, however, may not accurately estimate emissions of VOC.

(3) Emission factors were taken from AP-42, Chapter 10.6.3, Medium Density Fiberboard (8/2002).

(4) See Table 1, Process Rates.

(5) See Table 9, Baghouse TSP/PM10 Emissions

Table 7b
Furnish Dryer HAP/VOC Emissions TO BIOFILTER
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/ODT)		Maximum Uncontrolled Emissions **TO BIOFILTER**			
			lbs/hr [(a)]		tons/yr [(b)]	
VOC	2.29	(1)	32.17	(a)	71.2	(b)
CO		(2)	1.69	(2)	7.4	(2)
NOx		(2)	1.97	(2)	8.6	(2)

Calculations:

(a) Maximum hourly emissions (lbs/hr) = ((maximum hourly dryer throughput [dry-lbs/hr]) / 2000 x (emission factor [lbs/ODT]) + Press Vent emissions (PV) + Dryer natural gas combustion emissions

Maximum hourly dryer throughput [dry-lbs/hr] = 25,139 (3)

(b) Maximum annual emissions (tons/yr) = ((maximum annual dryer throughput [BDT/yr]) x (emission factor [lbs/ODT]) / 2000 + Press Vent emissions (PV) + Dryer natural gas combustion emissions

Maximum annual dryer throughput [dry-tons/yr] one line = 49,875 (3)

Notes:

(1) Emission factors were taken from AP-42, Chapter 10.6.3, Table 10.6.3-3, Medium Density Fiberboard Manufacturing (expressed as VOC as methane). This factor includes the emissions of some HAPs, however, may not accurately estimate emissions of VOC.

(2) See Table 7a, Press Vents Emissions TO BIOFILTER and Table 7d Furnish Dryer Natural Gas Combustion Criteria Pollutant Emissions TO BIOFILTER. Press Vent and Dryer natural gas combustions emissions are vented into the Dryer (D1) inlet.

(3) See Table 1, Production and Process Rates.

JELD-WEN WINDOWS & DOORS

Table 7c

Furnish Dryer Natural Gas Combustion Criteria Pollutant Emissions TO BIOFILTER
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MMscf)		Maximum Uncontrolled Emissions **TO BIOFILTER**	
			lbs/hr [(a)]	tons/yr [(b)]
TSP	7.60	(2)	7.1E-07	3.1E-06
PM10	5.70	(3)	5.3E-07	2.3E-06
PM2.5	1.90	(3)	1.8E-07	7.7E-07
SO2	0.60	(2)	0.01	0.05
CO	84.00	(2)	1.56	6.8
NOx	100.00	(2)	1.86	8.1
VOC	5.50	(2)	1.0E-01	4.5E-01
Lead	0.00	(2)	9.3E-06	4.1E-05
N_2O	0.00	(4)	5.36E-03	0.02
CH_4	0.00	(4)	0.05	0.23
CO_2	142.00	(4)	2,840	12,408

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly dryer combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly dryer combustion [MMBtu/hr] = 20.0 (5)

Natural gas heating value [MMBtu/MMscf] = 1,077 (6)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual dryer combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual dryer combustion [MMBtu/yr] = 174,762 (5)

Natural gas heating value [MMBtu/MMscf] = 1,077 (6)

Notes:

(1) Emissions from the furnish dryer are controlled by baghouses. Since the control device is not included in the AP-42 emission factor, particulate emissions include the control effect of the baghouses and the dryer cyclone.

(2) Emission factors were taken from AP-42, Chapter 1.4, Natural Gas Combustion (7/1998).

(3) Emission factor taken from AP-42, Chapter 1.4, Natural Gas Combustion. PM10= Condensable, PM2.5 = Filterable

(4) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

(5) See Table 1, Production and Process Rates.

(6) Provided by Dominon Hope Natural Gas.

JELD-WEN WINDOWS & DOORS

Table 7d

Furnish Dryer Natural Gas Combustion HAP Emissions TO BIOFILTER

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Uncontrolled Emissions **TO BIOFILTER**	
			lbs/hr [(a)]	tons/yr [(b)]
Acenaphthene	0.0000	(1)	3.3E-08	1.5E-07
Acenaphthylene	0.0000	(1)	3.3E-08	1.5E-07
Anthracene	0.0000	(1)	4.5E-08	1.9E-07
Arsenic	0.0002	(2)	3.7E-06	1.6E-05
Benz(a)anthracene	0.0000	(1)	3.3E-08	1.5E-07
Benzene	--	(3)	--	--
Benzo(a)pyrene	0.0000	(1)	2.2E-08	9.7E-08
Benzo(b)fluoranthene	0.0000	(1)	3.3E-08	1.5E-07
Benzo(g,h,i)perylene	0.0000	(1)	2.2E-08	9.7E-08
Benzo(k)fluoranthene	0.0000	(1)	3.3E-08	1.5E-07
Beryllium	0.0000	(2)	2.2E-07	9.7E-07
Cadmium	0.0011	(2)	2.0E-05	8.9E-05
Chromium (total)	0.0014	(2)	2.6E-05	1.1E-04
Chrysene	0.0000	(1)	3.3E-08	1.5E-07
Cobalt	0.0001	(2)	1.6E-06	6.8E-06
Dibenzo(a,h)anthracene	0.0000	(1)	2.2E-08	9.7E-08
Fluoranthene	0.0000	(1)	5.6E-08	2.4E-07
Fluorene	0.0000	(1)	5.2E-08	2.3E-07
Formaldehyde	--	(3)	--	--
Hexane	1.8000	(1)	3.3E-02	1.5E-01
Indeno(1,2,3,c,d)pyrene	0.0000	(1)	3.3E-08	1.5E-07
Manganese	0.0004	(2)	7.1E-06	3.1E-05
Mercury	0.0003	(2)	4.8E-06	2.1E-05
Naphthalene	0.0006	(1)	1.1E-05	4.9E-05
Nickel	0.0021	(2)	3.9E-05	1.7E-04
Phenanthrene	0.0000	(1)	3.2E-07	1.4E-06
Pyrene	0.0000	(1)	9.3E-08	4.1E-07
Selenium	0.0000	(2)	4.5E-07	1.9E-06

Table 7d
Furnish Dryer Natural Gas Combustion HAP Emissions TO BIOFILTER
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Uncontrolled Emissions **TO BIOFILTER**	
			lbs/hr [(a)]	tons/yr [(b)]
Toluene	0.0034	(1)	6.3E-05	2.8E-04
2-Methylnaphthalene	0.0000	(1)	4.5E-07	1.9E-06
3-Methylchloranthrene	0.0000	(1)	3.3E-08	1.5E-07
Dichlorobenzene	0.0012	(1)	2.2E-05	9.7E-05
7,12-Dimethylbenz(a)anthracene	0.0000	(1)	3.0E-07	1.3E-06
	Total HAPs		0.03	0.15

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly dryer combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly dryer combustion [MMBtu/hr] = 20.0 (4)
Natural gas heating value [MMBtu/MMscf] = 1,077 (5)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual dryer combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual dryer combustion [MMBtu/yr] = 174,762 (4)
Natural gas heating value [MMBtu/MMscf] = 1,077 (5)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-3, Emission Factors for Speciated Organic Compounds from Natural Gas Combustion (July 1998).

(2) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-4, Emission Factors for Metals from Natural Gas Combustion (July 1998).

(3) Benzene and formaldehyde emissions are included in Table 7 and were taken from source test data performed at the JELD-WEN, Wood Fiber Division, Craigsville, West Virginia facility.

(4) See Table 1, Production and Process Rates.

(5) Provided by Dominon Hope Natural Gas.

Table 8

Rotary Valve (pre-refiner) VOC/HAP Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/ODT)		Maximum Emissions lbs/hr		Maximum Emissions tons/yr	
TSP	0.01% of Chip Cyclone Throughput	(1)	2.46	(a)	4.89	(b)
PM10	0.01% of Chip Cyclone Throughput	(1)	0.62	(a)	1.22	(b)
PM 2.5	0.01% of Chip Cyclone Throughput	(1)	0.62	(a)	1.22	(b)
VOC	6.73E-02	(2)	0.85	(c)	1.68	(d)
Acetaldehyde	*3.32E-04*	(3)	*4.17E-03*	(c)	*8.3E-03*	(d)
Acrolein	1.09E-02	(3)	1.38E-01	(c)	2.7E-01	(d)
Formaldehyde	6.64E-04	(3)	8.34E-03	(c)	1.7E-02	(d)
Methanol	3.23E-02	(3)	4.05E-01	(c)	8.0E-01	(d)
Phenol	*3.32E-04*	(3)	*4.17E-03*	(c)	*8.3E-03*	(d)
Propionaldehyde	*3.32E-04*	(3)	*4.17E-03*	(c)	*8.3E-03*	(d)
	Total HAP		0.56		1.12	

Calculations:

(a) Maximum hourly TSP emissions (lbs/hr) = ((maximum hourly chip cyclone throughput [OD-lbs/hr]) x (Chip Cyclone Efficiency [%]) x 0.01%)

Maximum Hourly Chip Cyclone Throughput [OD-lbs/hr] = 25,141 (4)

Chip Cyclone Efficiency = 98% (5)

(b) Maximum annual emissions (tons/year) = ((maximum annual chip cyclone throughput [ODT/yr]) x (Chip Cyclone Efficiency [%]) x 0.01%)

Maximum Annual Chip Cleaning Cyclone Throughput [ODT/year] = 49,879 (4)

(c) Maximum hourly VOC/HAP emissions (lbs/hr) = ((maximum hourly chip cyclone throughput [OD-lbs/hr])/2000 x (emission factor [lbs/ODT])

(d) Maximum annual VOC/HAP emissions (tons/year) = ((maximum annual chip cyclone throughput [ODT/yr]) x (emission factor [lbs/ODT]) / (2000 [lbs/ton])

Notes:

(1) Engineering Judgment Provided by JELD-WEN Engineering.
The PM2.5 emissions were assumed to be 25% of the TSP emissions.
The PM_{10} emissions were assumed to be 25% of the TSP emissions.

(2) VOC emission factor is based on sum of HAP emission factors times 1.5 safety factor. This factor is an estimation of VOCs from this emission point.

(3) Emission factors were taken from a MACT source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia facility on March 20,2007.
Non-detects were assumed at the detection level and are represented in italics

(4) See Table 1, Production and Process Rates.

(5) See Table 9, Baghouse TSP/PM10 Emissions.

JELD-WEN WINDOWS & DOORS

Table 9
Baghouse TSP/PM_{10} Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Source ID	Emission Point ID	Maximum Hourly Throughput (lbs/hr)	Maximum Annual Throughput (ODT/yr)	Control Efficiency (%)	Maximum Emissions (1)	
						lbs/hr (a)	tons/yr (b)
Dryer Cyclone	C1	E18	31,450 (2)	62,211 (2)	99.00% (12)	-- (17)	-- (17)
Dryer Baghouse #1	BH1a	E18	115.3 (3)	228.1 (3)	99.95% (13)	0.06 (21)	0.11
Dryer Baghouse #2	BH1b	E18	115.3 (3)	228.1 (3)	99.95% (13)	0.06 (21)	0.11
Dryer Baghouse #3	BH1c	E18	115.3 (3)	228.1 (3)	99.95% (13)	0.06 (21)	0.11
Dryer BH Purge Cyclone	C8	E18	314.3 (20)	621.80 (20)	90.00% (15)	-- (17)	-- (17)
Former Baghouse	BH2	E10	945 (4)	1,829 (4)	99.90% (14)	0.95	1.83
Waste Baghouse	BH3	E4	379 (5)	718 (5)	99.90% (14)	0.38	0.72
Recycle Cyclone	C2	E4	1,370 (6)	2,570 (6)	95.00% (15)	-- (17)	-- (17)
Waste Cyclone	C3	E4	3,084 (7)	5,850 (7)	90.00% (16)	-- (17)	-- (17)
Middle Reject Cyclone	C4	E4	1,416 (8)	2,663 (8)	95.00% (15)	-- (17)	-- (17)
Chip Cyclone	C6	E4	25,141 (9)	49,879 (9)	98.00% (15)	-- (17)	-- (17)
Sizer Baghouse	BH4	E12	12,275 (10)	8,551 (10)	99.95% (14)	6.14	4.28
Chip Cleaning Cyclone	C5	E12	2,602 (11)	1,465 (11)	95.00% (15)	-- (17)	-- (17)
Press Vent Baghouse	BH6	E18	3.8 (19)	9.7 (19)	99.90% (14)	3.75E-03 (22)	0.01
Press Vent BH Purge Cyclone	C7	E18	3.4 (20)	8.9 (20)	90.00% (15)	-- (17)	-- (17)

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly throughput [lbs/hr]) x (1 - control efficiency [%])

(b) Maximum annual emissions (tons/yr) = (maximum hourly throughput [ODT/yr]) x (1 - control efficiency [%])

Notes:

(1) JELD-WEN estimates the 29% of the particulate would actually be PM_{10} based on extrapolation of data provided the by the manufacturer on a similar product with larger particle size. For conservatism JELD-WEN's calculations assume that 100% of TSP is PM10.

(2) The dryer cyclone throughput is the sum of the refiner throughput plus the wax used for door skins and 20% of the shave off before the blender.

(3) The three dryer baghouses are equal to one-third of the dryer cyclone throughput after the cyclone control efficiency has been applied.

(4) The former baghouse throughput is equal to 1.5% of the former throughput plus exhaust from the chip cyclone.

(5) The waste baghouse throughput is equal to the waste and middle reject throughputs after the cyclone control efficiencies have been applied.

(6) The recycle cyclone throughput is equal to 5% of the material from the reject screw.

(7) The waste cyclone throughput is equal to the exhaust from the recycle cyclone and the fuel silos, 1.25% of the throughput of the shave off and trim, and material from the reject screw and former baghouse.

(8) The middle reject cyclone throughput is equal to the material from the reject screw.

(9) The chip cyclone throughput is equal to the throughput of the dryer plus the emissions of the rotary valve.

(10) The sizer baghouse throughput is equal to the exhaust from chip cleaning cyclone plus the material from skin sizer, 80% of the hogged skins, and the usage of sodium carbonate in the die cleaning process.

Soda Blasting (lbs/hr)= 120 (18)
Soda Blasting (ODT/yr)= 22 (18)

(11) The chip cleaning cyclone throughput is equal to 20% of the hogged skins.

(12) Conservative engineering judgment; manufacturer predicted efficiency is 99.468%.

(13) Based on data provided by Westec.

(14) Conservative engineering judgment; manufacturer predicted efficiency is 99.90%.

(15) Conservative engineering judgment for large wood particles and fiber in cyclone.

(16) Conservative engineering judgment for large wood particles and fiber in cyclone, with some fines.

(17) All cyclones at the facility vent to a baghouse. Cyclone emissions are included in the applicable baghouse emissions.

(18) Soda blasting estimates based on once daily cleaning of eight dies. Each die can require up to 15 lbs of sodium bicarbonate per cleaning event.

(19) press vent baghouse (BH6) throughput is equal to the press vent (PV) emissions + rotary valve emissions + press vent cyclone emissions

(20) The press vent cyclone throughput is equal to the press vent baghouse (BH6) throughput - press vent baghouse (BH6) emissions.

(21) Particulate emissions form the dryer baghouses (BH1a, BH1b, & BH1c) are vented to the biofilter (BF, E18)

(22) Particulate emissions form press vent baghouse (BH6) vent to the dryer (D1) air inlet which eventually vents to the biofilter (BF, E18)

JELD-WEN WINDOWS & DOORS

Table 10

Baghouse VOC/HAP Emissions

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Source ID	Emission Point ID	Maximum Hourly Throughput	Maximum Annual Throughput	Pollutant	Emission Factor [1] (lbs/SF-1/8")	Maximum Emissions	
							lbs/hr [a]	tons/yr [b]
Former Baghouse	BH2	E10	22,671 [2] (SF-1/8"/hr)	188,668,062 [2] (SF-1/8"/year)	Formaldehyde	3.5E-06 lbs/SF-1/8"	0.08	0.33
					Methanol	6.0E-06 lbs/SF-1/8"	0.14	0.56
Waste Baghouse	BH3	E4	22,671 [2] (SF-1/8"/hr)	188,668,062 [2] (SF-1/8"/year)	Formaldehyde	9.2E-06 lbs/SF-1/8"	0.21	0.86
Sizer Baghouse	BH4	E12	12,275 [3] (lbs/hr)	8,551 [3] (ODT/year)	Formaldehyde	1.9E-05 lbs/lb-waste	0.23	0.16
						Total VOC/HAP [4]	0.65	1.9

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly throughput [units/hr]) x (emission factor [lbs/unit])

(b) Maximum annual emissions (tons/yr) = (maximum annual throughput [SF-$^{1}/_{8}$"/year]) x (emission factor [lbs/SF-$^{1}/_{8}$"]) / 2000

or Maximum annual emissions (tons/yr) = (maximum annual throughput [ODT/yr]) x (emission factor [lbs/lb-waste])

Notes:

(1) Emission factors were taken from a MACT source test performed at the JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia facility on March and June 2007. All other pollutants were reported as non-detects.

(2) The former and waste baghouse throughputs have been conservatively assumed to equal the maximum press throughput.

(3) See Table 9, Baghouse Particulate Emissions.

(4) Total VOCs are the sum of the individual HAPs.

JELD-WEN WINDOWS & DOORS

Table 11a

Primeline Ovens (PL - E13) Natural Gas Combustion Criteria Pollutant Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Pollutant	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [(a)]	tons/yr [(b)]
TSP	7.6	(1)	0.03	0.12
PM10	5.7	(2)	0.02	0.09
PM 2.5	1.9	(2)	0.01	0.03
SO2	0.6	(1)	0.002	0.01
CO	84	(1)	0.30	1.29
NOx	100	(1)	0.35	1.54
VOC	5.5	(1)	0.02	0.08
Lead	5.0E-04	(1)	1.8E-06	7.7E-06
N_2O	2.68E-04	(3)	1.0E-03	4.4E-03
CH_4	2.68E-03	(3)	0.01	0.04
CO_2	142	(3)	540	2,358

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly oven combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly oven combustion [MMBtu/hr] = 3.8 (4)

Natural gas heating value [MMBtu/MMscf] = 1,077 (5)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual oven combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual oven combustion [MMBtu/yr] = 33,205 (4)

Natural gas heating value [MMBtu/MMscf] = 1,077 (5)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Natural Gas Combustion (7/1998).

(2) Emission factor taken from AP-42, Chapter 1.4, Natural Gas Combustion. PM10= Condensable, PM2.5 = Filterable

(3) US EPA Mandatory GHG Reporting rule, Table C-1 (FR Vol. 74, No. 209, 30 Oct 2009).

(4) See Table 1, Production and Process Rates (sum of Oven #1 and Oven #3; Oven #2 is steam-heated).

(5) Provided by Dominon Hope Natural Gas.

JELD-WEN WINDOWS & DOORS

Table 11b
Primeline Ovens (PL - E13) Natural Gas Combustion HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [a]	tons/yr [b]
Acenaphthene	1.8E-06	(1)	6.4E-09	2.8E-08
Acenaphthylene	1.8E-06	(1)	6.4E-09	2.8E-08
Anthracene	2.4E-06	(1)	8.5E-09	3.7E-08
Arsenic	2.0E-04	(2)	7.1E-07	3.1E-06
Benz(a)anthracene	1.8E-06	(1)	6.4E-09	2.8E-08
Benzene	2.1E-03	(1)	7.4E-06	3.2E-05
Benzo(a)pyrene	1.2E-06	(1)	4.2E-09	1.8E-08
Benzo(b)fluoranthene	1.8E-06	(1)	6.4E-09	2.8E-08
Benzo(g,h,i)perylene	1.2E-06	(1)	4.2E-09	1.8E-08
Benzo(k)fluoranthene	1.8E-06	(1)	6.4E-09	2.8E-08
Beryllium	1.2E-05	(2)	4.2E-08	1.8E-07
Cadmium	1.1E-03	(2)	3.9E-06	1.7E-05
Chromium (total)	1.4E-03	(2)	4.9E-06	2.2E-05
Chrysene	1.8E-06	(1)	6.4E-09	2.8E-08
Cobalt	8.4E-05	(2)	3.0E-07	1.3E-06
Dibenzo(a,h)anthracene	1.2E-06	(1)	4.2E-09	1.8E-08
Fluoranthene	3.0E-06	(1)	1.1E-08	4.6E-08
Fluorene	2.8E-06	(1)	9.9E-09	4.3E-08
Formaldehyde	7.5E-02	(1)	2.6E-04	0.001
Hexane	1.8E+00	(1)	6.4E-03	2.8E-02
Indeno(1,2,3,c,d)pyrene	1.8E-06	(1)	6.4E-09	2.8E-08
Manganese	3.8E-04	(2)	1.3E-06	5.9E-06
Mercury	2.6E-04	(2)	9.2E-07	4.0E-06
Naphthalene	6.1E-04	(1)	2.2E-06	9.4E-06
Nickel	2.1E-03	(2)	7.4E-06	3.2E-05
Phenanthrene	1.7E-05	(1)	6.0E-08	2.6E-07
Pyrene	5.0E-06	(1)	1.8E-08	7.7E-08
Selenium	2.4E-05	(2)	8.5E-08	3.7E-07

Table 11b
Primeline Ovens (PL - E13) Natural Gas Combustion HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Emission Factor (lbs/MMscf)		Maximum Emissions	
			lbs/hr [(a)]	tons/yr [(b)]
Toluene	3.4E-03	(1)	1.2E-05	5.2E-05
2-Methylnaphthalene	2.4E-05	(1)	8.5E-08	3.7E-07
3-Methylchloranthrene	1.8E-06	(1)	6.4E-09	2.8E-08
Dichlorobenzene	1.2E-03	(1)	4.2E-06	1.8E-05
7,12-Dimethylbenz(a)anthracene	1.6E-05	(1)	5.6E-08	2.5E-07
	Total HAPs		0.01	0.03

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (emission factor [lbs/MMscf]) x (maximum hourly ovens combustion [MMBtu/hr]) / (natural gas heating value [MMBtu/MMscf])

Maximum hourly oven combustion [MMBtu/hr] = 3.8 (3)

Natural gas heating value [MMBtu/MMscf] = 1,077 (4)

(b) Maximum annual emissions (tons/yr) = (emission factor [lbs/MMscf]) x (maximum annual ovens combustion [MMBtu/yr]) / (natural gas heating value [MMBtu/MMscf]) / (2000 lbs/ton)

Maximum annual ovens combustion [MMBtu/yr] = 33,205 (3)

Natural gas heating value [MMBtu/MMscf] = 1,077 (4)

Notes:

(1) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-3, Emission Factors for Speciated Organic Compounds from Natural Gas Combustion (July 1998).

(2) Emission factors were taken from AP-42, Chapter 1.4, Table 1.4-4, Emission Factors for Metals from Natural Gas Combustion (July 1998).

(3) See Table 1, Production and Process Rates (sum of Oven #1 and Oven #3; Oven #2 is steam-heated).

(4) Provided by Dominon Hope Natural Gas.

Table 12
Primeline Paint Booth (PL - E14) VOC, HAP, and Particulate Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Material [1]	Pollutant	Maximum Emissions			
		lbs/hr		tons/yr	
Interior Primers JELD-WEN	Total VOC	22.38	(a)	84.19	(b)
	Total HAPs	0.19	(a)	0.70	(b)
	Styrene	0.03	(a)	0.10	(b)
	Methyl Methacrylate	0.01	(a)	0.02	(b)
	Formaldehyde	0.01	(a)	0.04	(b)
	Glycol Ether	0.14	(a)	0.51	(b)
	PM/PM10/PM2.5 (1)	0.62	(c)	2.33	(d)

Maximum hourly primer usage [gals/hr] =	74.6	(2)
Maximum annual primer usage [gals/yr] =	561,287	(2)
Percent interior primer usage [%] =	100.0%	(3)
Interior primer VOC content [lbs/gal] =	3.0E-01	(4)
Interior primer HAP content [lbs/gal] =	2.5E-03	(4)
Styrene content [lbs/gal] =	3.6E-04	(4)
Methyl Methacrylate content [lbs/gal] =	7.1E-05	(4)
Formaldehyde content [lbs/gal] =	1.4E-04	(4)
Glycol Ether content [lbs/gal] =	1.8E-03	(4)
Interior primer density [lbs/gal] =	13.86	(4)
Interior primer solids content [wt %] =	69.0%	(4)

Calculations:

(a) Maximum hourly VOC/HAP emissions (lbs/hr) = (maximum hourly primer usage [gals/hr]) x (percent primer usage [%]) x (VOC/HAP content [lbs/gal])

(b) Maximum annual VOC emissions (tons/yr) = (maximum annual primer usage [gals/yr]) x (percent primer usage [%]) x (VOC content [lbs/gal]) / (2000 lbs/ton)

(c) Maximum hourly PM emissions (lbs/hr) = (maximum hourly primer usage [gals/hr]) x (percent primer usage [%]) x (PM Emission Factor [lbs/gal])

(d) Maximum annual PM emissions (tons/yr) = (maximum annual primer usage [gals/yr]) x (percent primer usage [%]) x (PM Emission Factor [lbs/gal])/2000

Notes:

(1) PM Calculations assume that 100% of PM is PM2.5.
The emission factor is equal to the average of the test values plus two standard deviations.
PM Emission Factor [lbs/gal] = 0.0083

(2) See Table 1, Production and Process Rates.

(3) Provided by JELD-WEN Wood Fiber Division - West Virginia.

(4) From vendor MSDS sheet, product information sheet, or telephone conversation with the vendor.

JELD-WEN WINDOWS & DOORS

Table 13
Material Handling Conveyors Particulate Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Maximum Hourly Throughput [1] (tons/hr)	Pollutant	Maximum Emissions	
			lbs/hr [a]	tons/yr [b]
Truck Dump to Rotary Classifier (CV1) - Furnish	18.4	PM	0.43	1.76
		PM10	0.20	0.83
		PM2.5	0.03	0.13
Rotary Classifier to Metal Detector (CV2) - Furnish	18.4	PM	0.43	1.76
		PM10	0.20	0.83
		PM2.5	0.03	0.13
Metal Detector to Furnish Silo (CV3) - Furnish	18.4	PM	0.43	1.76
		PM10	0.20	0.83
		PM2.5	0.03	0.13
Furnish Storage Silo to Refiner (CV4) - Furnish	12.6	PM	0.29	1.21
		PM10	0.14	0.57
		PM2.5	0.02	0.09
Fuel Storage Silo to Boiler (CV5) - Hogged Fuel	3.9	PM	1.96	8.12
		PM10	0.93	3.84
		PM2.5	0.14	0.58
		Total TSP	3.53	14.61
		Total PM10	1.67	6.91
		Total PM2.5	0.25	1.05

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum hourly throughput [tons/hr]) x (emission factor [lbs/ton])

Furnish PM emission factor (lbs/ton) =	0.02	(c)
Hogged Fuel PM emission factor (lbs/ton) =	0.50	(c)
Furnish PM10 emission factor (lbs/ton) =	0.01	(c)
Hogged Fuel PM10 emission factor (lbs/ton) =	0.24	(c)
Furnish PM2.5 emission factor (lbs/ton) =	0.00	(c)
Hogged Fuel PM2.5 emission factor (lbs/ton) =	0.04	(c)

(b) Maximum annual emissions (tons/yr) = (maximum hourly emissions [tons/yr]) x (truck dump hours of operation [hrs/yr[) / (2000 lbs/ton)

Truck dump hours of operation [hrs/yr] =	8,278	(2)
Boiler & Silo conveyor hours of operation [hrs/yr] =	8,278	(2)

(c) Emission factor (lbs/ton) = (particle size multiplier) x (0.0032) x (((wind speed [mph] / 5)^1.3) / ((moisture content [wt%] / 2)^1.4))

PM Particle size multiplier =	0.74	(3)
PM10 Particle size multiplier =	0.35	(3)
PM2.5 Particle size multiplier =	0.053	(3)
Wind speed (mph) =	5.8	(4)
Furnish moisture content [%] =	45%	(5)
Hogged fuel moisture content [%] =	5%	(5)

Notes:

(1) Hourly capacities based on maximum hourly furnish truck dump throughput (BD-lbs/hr) = (number of trucks per hour [trucks/hr]) x (weight of truck load [wet-lbs/hr]) x (1 - moisture content [%])

Number of trucks per hour [trucks/hr] =	1.33	(5)
Weight per truck load [wet-lbs/truck] =	50,195	(5)
Moisture content [%] =	45%	(5)

Maximum hourly fuel truck dump throughput (BD-lbs/hr) = (maximum wood fuel purchased [lbs/hr]) x (1 - moisture content [%])

Maximum wood fuel purchased [lbs/hr] =	4,700	(6)
Moisture content [%] =	45%	(5)

(2) See Table 1, Production and Process Rates.

(3) Emission factor equation and constants were taken from AP-42, Chapter 13.2.4, Aggregate Handling and Storage Piles (11/2006).

(4) A 57 year annual average wind speed for Charleston, WV take from the Comparative Climatic Data for the United States through 2004 from the National Climatic Data Center Website.

(5) Provided by JELD-WEN Wood Fiber Division - West Virginia.

(6) An estimate of fuel required, in addition to fuel from production operations, in order to operate the boiler at rated capacity.

JELD-WEN WINDOWS & DOORS

Table 14
Coating Manufacturing (DC2 - E15) VOC/HAP Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Raw Material		Pollutant	VOC/HAP Content [1]		Maximum Annual Usage [2] (gals/yr)	Maximum Emissions	
Material	Density [1] (lbs/gal)					lbs/hr [a]	tons/yr [c]
Dispersing Agent	8.97	Total VOC	70	wt %	7,718	0.044	0.080
Fungicide	8.85	Total VOC	6.56	lbs/gal	2,055	0.012	0.022
		Glycol Ether	40	wt %		0.007	0.012
Preservative	9.26	Total VOC	0.15	lbs/gal	2,400	0.000	0.001
		Formaldehyde	1.5	wt %		0.0003	0.001
Polymer	8.6	Total VOC	0.014	lbs/gal	478,800	0.006	0.011
		Glycol Ether	0.090	wt %		0.003	0.006
		Styrene	0.050	wt %		0.002	0.003
Additive	8.93	Total VOC	0.010	lbs/gal	22,500	0.000	0.000
Glycol Ether	8.62	Total VOC	7.910	lbs/gal	39,717	0.288	0.518
		Glycol Ether	99.000	wt%		0.311	0.559
Alkyl	7.43	Total VOC	7.430	lbs/gal	3,544	0.024	0.043
Pigment	15.65	Total VOC	0.080	lbs/gal	1,723	0.000	0.000
Solution	7.73	Total VOC	3.680	lbs/gal	37,616	0.127	0.228
Defoamer	7.34	Total VOC	0.22	lbs/gal	11,400	0.002	0.004
Polymer	9.1	Total VOC	0.0005	lbs/gal	277,000	0.000	0.000229
Solution	9	Total VOC	0.00	lbs/gal	3,000	0.000	0.000000
Plasticizer	9.26	Total VOC	0.296	lbs/gal	5,544	0.002	0.002711
Solution	10.8	Total VOC	0.00	lbs/gal	6,647	0.000	0.000000
Polymer	8.8	Total VOC	0.00	lbs/gal	48,723	0.000	0.000000
Solution	8.59	Total VOC	0.00	lbs/gal	227	0.000	0.000000
Solution	8.59	Total VOC	0.00	lbs/gal	2,722	0.000	0.000000
Solution	9.9	Total VOC	0.00	lbs/gal	974	0.000	0.000000
					Total VOC	0.50	0.91
					Total HAP	0.32	0.58

Calculations:

(a) Maximum hourly emissions (lbs/hr) = (maximum annual emissions [tons/yr]) x (2000 lbs/ton) / (paint manufacturing hours of operation [hrs/yr])

Paint manufacturing hours of operation [hrs/yr] = 3,600 (b)

(b) Paint manufacturing hours of operation (hrs/yr) = (maximum annual batch rate [batch/yr]) x (hourly batch rate [hrs/batch])

Maximum annual batch rate [batch/yr] = 600 (2)

Hourly batch rate [hrs/batch] = 6 (2)

(c) Maximum annual emissions (tons/yr) = (maximum annual product usage [gals/yr]) x (density [lbs/gal]) x (VOC/HAP content [wt %]) x (percent VOC/HAP loss [

Maximum annual emissions (tons/yr) = (maximum annual product usage [gals/yr]) x (VOC/HAP content [lbs/gal]) x (percent VOC/HAP loss [%]) / (2000 lbs/ton)

Percent VOC/HAP loss [%] = 0.33% (3)

Notes:

(1) From vendor MSDS sheet, product information sheet, or telephone conversation with the vendor.

(2) Provided by JELD-WEN Wood Fiber Division - West Virginia.

(3) JELD-WEN laboratory testing under actual process conditions, excluding water.

JELD-WEN WINDOWS & DOORS

Table 15
Coating Manufacturing (DC2, BH5 - E15) Particulate Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Unit	Maximum Annual Usage [1] (tons/yr)	Annual Throughput (Before Baghouse) [a] (tons/yr)	Maximum Emissions [2]	
			lbs/hr [b]	tons/yr [c]
Titanium Dioxide	600	0.94	5.2E-04	9.4E-04
Calcium Carbonate Slurry	5,504	8.64	4.8E-03	8.6E-03
Talc	1800	2.83	1.6E-03	2.8E-03
Pigment	7.50	0.01	6.5E-06	1.2E-05
Additives	1,800	2.83	1.6E-03	2.8E-03
Various KLN Clays	400.0	0.63	3.5E-04	6.3E-04
		Total TSP	0.01	0.02

Calculations:

(a) Maximum annual throughput before baghouse (tons/yr) = (maximum annual usage [tons/yr]) x (dust generation factor [lbs/ton]) / (2000 lbs/ton)
Dust generation factor [lbs/ton] = 3.14 (3)

(b) Maximum hourly emissions (lbs/hr) = (maximum annual emissions [tons/yr]) x (2000 lbs/ton) / (paint manufacturing hours of operation [hrs/yr])
Paint manufacturing hours of operation [hrs/yr] = 3,600 (4)

(c) Maximum annual emissions (tons/yr) = (maximum annual throughput before baghouse [ton/yr]) x (1 - baghouse control efficiency [%])
Baghouse control efficiency (%) = 99.9% (1)

Notes:

(1) Provided by JELD-WEN Wood Fiber Division - West Virginia.
(2) Calculations assume that 100% of TSP is $PM_{10}/PM_{2.5}$.
(3) From AP-42, Chapter 11.12, Table 11.12-2, Total Particulate Matter Emission Factor for Uncontrolled Cement Unloading to an Elevated Storage Silo (10/2001).
(4) See Table 20, Paint Manufacturing VOC/HAP Emissions.

JELD-WEN WINDOWS & DOORS

Table 16
Die Coating (DC-E17) Emissions
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Raw Material [1]			Hourly PTE Usage (gal)[2]	Annual PTE Usage (gal)[3]	Raw Material Components [1]			Estimated PTE [3]					
Product	Density (lbs/gal)	Solids Content (wt %)			Name	Amount in Product	Units	VOC [a] (lbs/hr)	VOC [b] (tons/yr)	HAP [a] (lbs/hr)	HAP [b] (tons/yr)	TSP/PM10 [c,4] (lbs/hr)	TSP/PM10 [c,4] (tons/yr)
Cleaner Degreaser (wipe-on cleaner)	8.85		0.50	500	Total VOC	3.98	wt%	0.18	0.1				
					Diethylene glycol monbutyl ether	3	wt%			0.13	0.07		
Isopropyl Alcohol (wipe-on cleaner)	6.59		0.22	216	Total VOC	100	wt%	1.42	0.7				
Die Coating	10.85	63.5	0.10	97	Total VOC	46	wt%	0.48	0.2			0.01	0.00
					Methanol	8	wt%			0.08	0.04		
					Silane	28	wt%						
					Isopropyl Alcohol	5	wt%						
					Ethyl Alcohol	5	wt%						
					Totals			2.08	1.0	0.22	0.1	1.0E-02	5.0E-03

Calculations:

(a) Hourly PTE emissions [lbs/hr] = (hourly PTE usage [gals/hr]) x (density [lbs/gal]) x (VOC/HAP content [wt%])

(b) Annual PTE VOC/HAP emissions [tons/yr] = (annual PTE usage [gals/yr]) x (density [lbs/gal]) x (VOC/HAP content [wt%]) / (2000 [lbs/ton])

(c) Annual PTE TSP emissions [tons/yr] = (annual PTE usage [gal/yr]) x (density [lbs/gal]) x (1 - spray transfer efficiency [%]) / 100) x (solids content [wt %] / 100) x (1 - spray booth filter efficiency [%]) / 100)) / 2000 [lbs/ton]

Spray Transfer Efficiency [%] = 70 (5)

Filter Efficiency [%] = 95 (5)

Notes:

(1) Based on maximum from manufacturer's product MSDS.

(2) Hourly product usage conservatively estimated based on several months of product trials at JELD-WEN Wood Fiber of Oregon.

(3) Annual product usage conservatively estimated based on the volume required to clean and coat dies for each press opening once every seven days of production. JELD-WEN Engineering estimates dies will be coated a maximum of once every 14 days of production based on several months of product trials at JELD-WEN Wood Fiber Division - Oregon.

(4) 100% of PM is assumed to be be PM_{10} and $PM_{2.5}$.

(5) Conservative engineering estimate.

JELD-WEN WINDOWS & DOORS

Table 17
Maximum Annual Emissions Summary
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Point	Emission Point ID #	Maximum Annual Emissions (tons/yr)										
		TSP	PM10	PM 2.5	SO_2	CO	NOx	VOC	Lead	N_2O	CH_4	CO_2
Wood Boiler (B1)	E5	4.49	4.49	4.49	6.83	88.5	145.2	4.74	0.01	2.53	19.26	56,468
Natural Gas Boiler (B2)	E6	1.16	0.87	0.29	0.09	0.11	26.1	0.84	0.00	0.04	0.44	23,389
Truck Dump (TD)	E1	5.41	1.35	1.35	--	--	--	--	--	--	--	--
East Furnish Silo (FSE)	E2a,b,c,d,e	2.23	0.56	0.56	--	--	--	--	--	--	--	--
West Furnish Silo (FSW)	E3a,b,c,d,e	2.23	0.56	0.56	--	--	--	--	--	--	--	--
Former Baghouse (BH2)	E10	1.83	1.83	1.83	--	--	--	0.33	--	--	--	--
Waste Baghouse (BH3)	E4	0.72	0.72	0.72	--	--	--	0.86	--	--	--	--
Sizer Baghouse (BH4)	E12	4.28	4.28	4.28	--	--	--	0.16	--	--	--	--
Primeline - Ovens (PL)	E13	0.12	0.09	0.03	0.01	1.29	1.54	0.08	0.00	0.004	0.04	2,358
Primeline Paint Booth (PL)	E14	2.33	2.33	2.33	--	--	--	84.2	--	--	--	--
Facility-Wide VOCs (FWVOC)	FWVOC	--	--	--	--	--	--	--	--	--	--	--
Conveyors (CV1 - CV5)	Fugitive	14.61	6.91	1.05	--	--	--	--	--	--	--	--
Coating Manufacturing (DC2)	E15	0.02	0.02	0.02	--	--	--	0.91	--	--	--	--
Rotary Valve (RV)	E16	4.89	1.22	1.22	--	--	--	1.68	--	--	--	--
Die Coating Paint Booth (DC)	E17	0.00	0.00	0.00	--	--	--	1.04	--	--	--	--
Biofilter (BF)	E18	0.35	0.35	0.35	0.05	7.35	8.59	67.67	0.00	0.02	0.23	12,408
Pollutant Total		44.7	25.6	19.1	7.0	97.2	181.4	162.5	0.0132	2.6	20.0	94,623

Table 18
Maximum HAP Emissions Summary
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Point	Maximum Emissions	
	Hourly (lbs/hr)	Annual (tons/yr)
Total Formaldehyde (excluding NG combustion)	0.84	2.76
Total Methanol	0.37	1.52
Total HAPs from Hogged-Fuel Boiler (B1)	2.42	10.55
Total HAPs from Natural Gas Boiler (B2)	0.07	0.29
Total HAPs from Biofilter	0.57	2.39
Total HAPs from Rotary Valve (RV)	0.56	1.12
Total HAPs from Baghouses (B2, B3, B4)	0.65	1.92
Total HAPs from Primeline (PL)	0.71	0.73
Total HAPs from Coating Manufacturing (DC2)	0.32	0.58
Total HAPs from Die Coating (DC)	0.22	0.11
Total HAP	**5.5**	**17.69**

JELD-WEN WINDOWS & DOORS

Table 19
Maximum HAP Emissions Detailed Summary
JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

HAP	Wood-Fired Boiler (tons/yr)	Natural Gas- Fired Boiler (tons/yr)	Rotary Valve (tons/yr)	Biofilter Outlet (tons/yr)	Baghouses (tons/yr)	Coating Manufacturing (tons/yr)	Prime Line (tons/yr)	Die Coating (tons/yr)	Potential Emissions (tons/yr)
Acenaphthene	2.5E-04	2.8E-07		1.5E-07			2.8E-08		**2.5E-04**
Acenaphthylene	1.4E-03	2.8E-07		1.5E-07			2.8E-08		**1.4E-03**
Acetaldehyde	2.3E-01		8.3E-03	0.1					**3.8E-01**
Acetophenone	8.7E-07								**8.7E-07**
Acrolein	1.1E+00		2.7E-01	0.1					**1.4E+00**
Anthracene	8.2E-04	3.7E-07		1.9E-07			3.7E-08		**8.2E-04**
Antimony	2.2E-03								**2.2E-03**
Arsenic	6.0E-03	3.1E-05		1.6E-05			3.1E-06		**6.1E-03**
Benzene	1.1	3.2E-04		6.6E-02			3.2E-05		**1.2E+00**
Benzo(a)anthracene	1.8E-05	2.8E-07		1.5E-07			2.8E-08		**1.8E-05**
Benzo(a)pyrene	7.1E-04	1.8E-07		9.7E-08			1.8E-08		**7.1E-04**
Benzo(b)fluoranthene	2.7E-05	2.8E-07		1.5E-07			2.8E-08		**2.8E-05**
Benzo(g,h,i)perylene	2.5E-05	1.8E-07		9.7E-08			1.8E-08		**2.6E-05**
Benzo(k)fluoranthene	9.8E-06	2.8E-07		1.5E-07			2.8E-08		**1.0E-05**
Beryllium	3.0E-04	1.8E-06		9.7E-07			1.8E-07		**3.0E-04**
bis(2-Ethylhexyl)phthalate	1.3E-05								**1.3E-05**
Bromomethane (Methyl Bromide)	4.1E-03								**4.1E-03**
Cadmium	1.1E-03	1.7E-04		8.9E-05			1.7E-05		**1.4E-03**
Carbon tetrachloride	1.2E-02								**1.2E-02**
Chlorine	2.2E-01								**2.2E-01**
Chlorobenzene	9.0E-03								**9.0E-03**
Chloroform	7.6E-03								**7.6E-03**
Chloromethane (Methyl Chloride)	6.3E-03								**6.3E-03**
Chromium (Total)	5.7E-03	2.1E-04		1.1E-04			2.2E-05		**6.1E-03**
Chrysene	1.0E-05	2.8E-07		1.5E-07			2.8E-08		**1.1E-05**
Cobalt	1.8E-03	1.3E-05		6.8E-06			1.3E-06		**1.8E-03**
Dibenzo(a,h)anthracene	2.5E-06	1.8E-07		9.7E-08			1.8E-08		**2.8E-06**
Dichlorobenzene		1.8E-04		9.7E-05			1.8E-05		**3.0E-04**
1,2-Dichloroethane (Ethylene dichloride)	7.9E-03								**7.9E-03**
Dichloromethane (Methylene Chloride)	7.9E-02								**7.9E-02**
1,2-Dichloropropane (Propylene dichloride)	9.0E-03								**9.0E-03**
7,12-Dimethylbenz(a)anthracene		2.4E-06		1.3E-06			2.5E-07		**4.0E-06**
2,4-Dinitrophenol	4.9E-05								**4.9E-05**
Ethylbenzene	8.5E-03								**8.5E-03**
Fluoranthene	4.4E-04	4.6E-07		2.4E-07			4.6E-08		**4.4E-04**
Fluorene	9.3E-04	4.3E-07		2.3E-07			4.3E-08		**9.3E-04**
Formaldehyde	1.20	0.011	0.02	0.2	1.4	0.001	3.9E-02		**2.8E+00**
Glycol ethers						5.8E-01	5.1E-01	6.6E-02	**1.2E+00**
Hexane		2.8E-01		1.5E-01			2.8E-02		**4.5E-01**
Hydrogen chloride	5.2								**5.2E+00**
Indeno(1,2,3,c,d)pyrene	2.4E-05	2.8E-07		1.5E-07			2.8E-08		**2.4E-05**
Lead	1.3E-02	7.6E-05		4.1E-05			7.7E-06		**1.3E-02**
Manganese	0.44	0.00		0.00			5.86E-06		**0.44**
Mercury	0.00	0.00		0.00			4.01E-06		**0.00**
Methanol			0.80	0.96	0.56			0.04	**2.37**
Methyl Methacrylate							1.99E-02		**0.02**
Methylene Diphenyl Diisocyanate (MDI)				0.00					**0.00**
2-Methylnaphthalene		0.00		0.00			3.70E-07		**0.00**
3-Methylchloranthrene		0.00		0.00			2.77E-08		**0.00**
Naphthalene	0.03	0.00		0.00			9.40E-06		**0.03**
Nickel	0.01	0.00		0.00			3.24E-05		**0.01**
4-Nitrophenol	0.00								**0.00**
Pentachlorophenol (PCP)	0.00								**0.00**
Phenanthrene	0.00	0.00		0.00			2.62E-07		**0.00**
Phenol	0.01		0.01	0.71					**0.74**
Polychlorinated Biphenyls	0.00								**0.00**
Polychlorinated dibenzo-p-dioxins	0.00								**0.00**
Polychlorinated dibenzo-p-furans	0.00								**0.00**
Propionaldehyde	0.02		0.01	0.12					**0.14**
Pyrene	0.00	0.00		0.00			7.71E-08		**0.00**
Selenium	0.00	0.00		0.00			3.70E-07		**0.00**
Styrene	0.52					0.003	9.96E-02		**0.62**
Tetrachloroethene	0.01								**0.01**
Toluene	0.25	0.00		0.00			5.24E-05		**0.25**
Trichloroethene	0.01								**0.01**
1,1,1-trichloroethylene (Methyl Chloroform)	0.01								**0.01**
Vinyl chloride	0.00								**0.00**
Xylene	0.01								**0.01**
Totals	**10.55**	**0.29**	**1.12**	**2.39**	**1.92**	**0.58**	**0.70**	**0.11**	**17.66**

Table 20

TSP/PM_{10} Process Weight Determination

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Emission Point ID	Material Throughput (lb/hr)		Short Term TSP/PM_{10} (lb/hr)		Maximum Allowable Total Stack Emissions[(a)] (lb/hr)	Meets Emissions Limit (Yes/No)
E4	379.18	(1)	0.38	(1)	0.46	Yes
E7	115.31	(1)	0.06	(1)	0.14	Yes
E8	115.31	(1)	0.06	(1)	0.14	Yes
E9	115.31	(1)	0.06	(1)	0.14	Yes
E10	945.15	(1)	0.95	(1)	1.13	Yes
E12	12,274.58	(1)	6.14	(1)	7.36	Yes
E13	1,033.78	(3)	0.03	(4)	1.24	Yes
E14a, E14b	1,033.78	(2)	0.62	(5)	1.24	Yes

Notes:

(a) Maximum allowable total stack emissions (lb/hr) = [Material throughput (lb/hr)] x [linear regression (lbs/lb of throughput)] (6)

References:

(1) Information taken from Table 11, "Baghouse Particulate Emissions".
(2) Information taken from Table 17, "Primeline Paint Booth Particulate Emissions"
(3) Assumes all material placed through paint booth goes to the paint drying ovens.
(4) Information taken from Table 15, "Primeline Ovens".
(5) Information taken from Table 17, "Primeline Paint Booth"
(6) Linear regression taken from Table 26 for material throughput between two stated numbers.

JELD-WEN WINDOWS & DOORS

Table 21

TSP/PM_{10} Process Weight Table

JELD-WEN, inc., Wood Fiber Division - Craigsville, West Virginia

Operating Source Operation Process Weight Rate [1] (lbs/hr)	Maximum Allowable Total Stack Emissions Type 'a' [1] (lb/hr)	Linear Regression Calculation (lbs/lb of throughput) [a]
0	0.0	---
2,500	3.0	1.20E-03
5,000	5.0	8.00E-04
10,000	10.0	1.00E-03
20,000	16.0	6.00E-04
30,000	22.0	6.00E-04
40,000	28.0	6.00E-04
50,000	31.0	3.00E-04
100,000	33.0	4.00E-05
200,000	37.0	4.00E-05
300,000	40.0	3.00E-05
400,000	43.0	3.00E-05
500,000	47.0	4.00E-05
600,000	50.0	3.00E-05
700,000	50.0	0.00
800,000	50.0	0.00
900,000	50.0	0.00
1,800,000	50.0	0.00

Notes:

(a) Linear regression: ((Actual process throughput [lb/hr]) - (smaller process weight [lb/hr])) /
((larger process weight [lb/hr]) - (smaller process weight [lb/hr]) =
((Actual emissions [lb/hr]) - (smaller allowable emissions [lb/hr])) /
((larger allowable emissions [lb/hr]) - (smaller allowable emissions [lb/hr])

References:

(1) Information from West Virginia Department of Environmental Quality
45CSR7-4.1 Table 45-7A.