# TITLE V AIR PERMIT APPLICATION

## Amite BioEnergy LLC > Gloster, MS
## AI No. 57796

drax

Prepared By:

**TRINITY CONSULTANTS**
One Galleria Blvd., Suite 1030
Metairie, Louisiana 70001
(504) 828-5845
www.TrinityConsultants.com

February 2022

Project 211902.0030

Trinity Consultants

*Environmental solutions delivered uncommonly well*

# TABLE OF CONTENTS

# LIST OF TABLES

# 1. AIR PERMIT APPLICATION EXECUTIVE SUMMARY

## 1.1. PROJECT BACKGROUND / DESCRIPTION

Amite BioEnergy LLC (Amite) owns and operates a wood pellet manufacturing facility located in Amite County, Gloster, MS. The facility is currently permitted to operate under Permit-to-Construct No. 0080-00031, issued on November 26 ,2012, modified on March 21, 2014, and then modified again on March 9, 2021.

Amite is including the following revisions from the Construction Permit in this Title V application package:

- Change the annual pellet production capacity to 624,700 US ODT (oven-dried tons) from the previously permitted 771,392 ODT/year in the Construction Permit.
- Remove the 5 gravity-feed green hammermills. They will not be constructed.
- The 3 secondary hammermills will not be converted into dry shavings hammermills. They will remain in operation per the original design.
- Added Bypass During Furnace Startup/Shutdown at 50 hrs/yr (AA-203b).
- Added Bypass During Furnace Idling at 500 hrs/yr (AA-203c).
- Added Bypass During Dryer Startup/Shutdown at 50 hrs/yr (AA-204b).

**Table 1-1. Facility-Wide Emissions Summary**

| Pollutant | Currently Permitted Emissions[1] (tpy) | Proposed Facility-wide PTE Emissions (tpy) | Change (tpy) |
|---|---|---|---|
| $PM_{10}$ | 35.88 | 34.78 | -1.10 |
| $PM_{2.5}$ | 28.49 | 29.86 | 1.37 |
| $SO_2$ | 50.80 | 50.89 | 0.09 |
| $NO_x$ | 223.26 | 96.12 | -127.14 |
| CO | 160.31 | 248.52 | 88.21 |
| VOC | 195.52 | 120.53 | -74.99 |
| Total HAPs | 23.88 | 40.07 | 16.19 |
| $CO_2e$[2] | 19,606 | 19,533 | -73 |

[1] Based on Title V Application MDEQ Section B forms submitted in August 2020.

[2] $CO_2e$ totals exclude biogenic $CO_2e$ emissions.

# 2.1. FACILITY OPERATIONS OVERVIEW

Amite produces wood pellets from whole logs, wood chips, and clean mill and forest residuals. The raw material is delivered to the site by trucks, and the produced pellets are shipped off site by railcars. The facility comprises several process areas, such as: wood receiving and storage; wood debarking, chipping, and storage; biomass fuel sizing and storage; chip drying; hammermills; pellet mills; pellet storage; and load out.

## 2.1.1. Wood Receiving and Storage

The facility receives approximately 25-30 percent of the raw material as whole logs via trucks and 75-80 percent as wood chips and clean mill (saw dust) and forest residuals (chips). The wood logs are stored outdoors in piles. Trees are usually sourced within a 100-mile radius of the facility.

## 2.1.2. Logs Processing

The log crane transfers the whole logs to a conveyor that moves the whole logs through a debarking drum. These debarked whole logs are fed to a chipper, and the chips produced are transferred by conveyor to an outdoor storage pile(s). The bark is conveyed to a storage pile and used as fuel in the biomass furnace.

## 2.1.3. Chip Dryer/Biomass Furnace

Chips are transferred from chip storage and are then are dried in a single pass rotary dryer to a moisture content of approximately 11 percent and then sent through high efficiency cyclones to remove fines. Heat for the dryer is supplied by a furnace burning bark and other clean biomass (e.g., clean mill and forest residuals) which is delivered via a conveyor from the fuel storage building to the biomass furnace. The emissions from the furnace, dryer, and the cyclones (fines) are routed to a wet electrostatic precipitator (WESP) and then to a regenerative thermal oxidizer (RTO) prior to discharge to the atmosphere. The WESP and RTO control particulate, acid gas, and volatile organic compound (VOC) emissions.

## 2.1.4. Primary Hammermills

The dried wood chips are fed to the Hammermill Feed Silo via a conveyor. The wood chips then are conveyed to the primary hammermills, where they are ground. Each of the primary hammermills is equipped with a pneumatic system equipped with a filter to limit particulate emissions to 0.015 gr/scf. After the filters the emissions from the system are routed to the RCO (regenerative catalytic oxidizer) / RTO (regenerative thermal oxidizer) prior to discharge to the atmosphere. The RCO controls particulate, acid gas, and VOC emissions.

### 2.1.5. Secondary Hammermills

The secondary hammermills further reduce the size of the chips. The emissions from the system are routed to the RCO prior to discharge to the atmosphere. The RCO controls particulate, acid gas, and VOC emissions.

### 2.1.6. Starch Silo System

The starch silo and starch addition system add starch as a binder just upstream of the pellet mills. The starch is delivered via truck. The starch silo has a particulate matter filter to limit emissions to 0.015 gr/scf.

### 2.1.7. Pellet Mills

The ground wood is conveyed from the primary hammermills or the secondary hammermills to six pellet mill lines. Each line is equipped with two mills and a cooler. The ground wood is compressed by pelletizer rotating press rolls and then passed through sizing dies perforated with round holes. The high pressure of the dies and the heat of friction activates the lignin in the wood thereby bonding the ground wood into a pellet. The pellet temperature is maintained at 200 to 250 degrees Fahrenheit (F) to minimize the use of adhesives and bonding agents. The pellet mills are subsequently cooled in the pellet coolers.

The pelletizers and coolers exhaust to six air and dust extraction systems, each equipped with filters to limit particulate emissions to 0.015 gr/scf. After the filters, the emissions from the system are routed to RCO prior to discharge to the atmosphere. The RCO controls particulate, acid gas, and VOC emissions.

The pellets are then conveyed to two pellet storage silos. The silos are equipped with filters to limit the particulate emissions to 0.015 gr/scf.

### 2.1.8. Regenerative Catalytic Oxidizer (RCO)

The RCO controls VOC emissions from the primary hammermills, the secondary hammermills, and the pellet coolers.

### 2.1.9. Pellet Loadout

Pellets from the pellet silos are transferred via enclosed conveyors to the pellet loadout building. The pellets are screened prior to loadout to reduce fugitive emissions, and the loadout system is equipped with a fugitive dust capture system to minimize fugitive emissions. The fines from these two dust capture systems are pneumatically conveyed to a point between the primary hammermill and secondary hammermill feed silos for remanufacturing into wood pellets. This pneumatic system is equipped with a filter to limit particulate emissions to 0.015 gr/scf.

### 2.1.10. General Activities

The facility minimizes particulate emissions while receiving logs, transferring wood chips, and shipping pellets by using primarily paved roads. The facility has installed an emergency diesel generator and a diesel fire pump as backup.

### 3.1.1. Regenerative Thermal Oxidizer (RTO)

$SO_2$ emissions were calculated based on a February 2016 stack test conducted at a sister facilty in Louisiana, Morehouse BioEnergy (Morehouse). Emissions of all other pollutants were calculated based on performance test conducted at Amite in July 2021.

### 3.1.2. Regenerative Catalytic Oxidizer (RCO)

$SO_2$ emissions were calculated based on a February 2016 stack test conducted at a sister facilty in Louisiana, Morehouse BioEnergy (Morehouse). Emissions of all other pollutants were calculated based on performance test conducted at Amite in July 2021.

### 3.1.3. Primary Hammermill Feed Silo

$PM_{10}$ and $PM_{2.5}$ emissions were calculated using vendor data. VOC, Methanol, Formaldehyde, and Acetaldehyde emissions were calculated using performance test data from a sister facility, Morehouse, on February 10-16, 2016. A 25% safety factor was added to the test data to calculate emissions.

### 3.1.4. Primary Hammermill Pneumatic Systems 1-6

$PM_{10}$ and $PM_{2.5}$ emissions were calculated using data from stack testing conducted on March 12 -15, 2019 at a sister facility, Morehouse. VOC emissions were calculated using data from stack testing conducted in November 2018 at Amite. Methanol, Formaldehyde, and Acetaldehyde emissions were calculated using performance test data from a sister facility, Morehouse, on February 10-16, 2016. A 25% safety factor was added to all test data to calculate emissions. Note that VOC emissions are routed to the RCO.

### 3.1.5. Secondary Hammermill Pneumatic System

$PM_{10}$ and $PM_{2.5}$ emissions were calculated using data from stack testing conducted at a sister facility, Morehouse, on March 12 -15, 2019. VOC emissions were calculated using data from stack testing conducted at Amite in November 2018. Methanol, Formaldehyde, and Acetaldehyde emissions were calculated using performance test data from February 10-16, 2016 t a sister facility,Morehosuse. A 25% safety factor was added to all test data to calculate emissions. Note that VOC emissions are routed to the RCO.

### 3.1.6. Secondary Hammermill Nos. 1 & 2 Feed Silo Bin Vents

$PM_{10}$ and $PM_{2.5}$ emissions were calculated using vendor data. VOC, Methanol, Formaldehyde, and Acetaldehyde emissions were calculated using performance test data from February 10-16, 2016 at a sister facility, Morehouse. A 25% safety factor was added to the test data to calculate emissions.

### 3.1.7. Pellet Cooler Pneumatic Systems 1-6

$PM_{10}$ and $PM_{2.5}$ emissions were calculated using data from stack testing conducted on March 12 -15, 2019 at a sister facility, Morehouse. VOC emissions were calculated using data from stack testing

conducted in November 2018 at Amite. Methanol, Formaldehyde, and Acetaldehyde emissions were calculated using performance test data from February 10-16, 2016 at a sister facility, Morehouse. A 25% safety factor was added to all test data to calculate emissions. Note that VOC emissions are routed to the RCO.

### 3.1.8. Starch Silo

Emissions from the new starch silo were calculated using the exhaust flow estimated from a sister facility[3] and particulate content.

### 3.1.9. Pellet Storage Silo Bin Vents 1 & 2

$PM_{10}$ and $PM_{2.5}$ emissions were calculated using vendor data. VOC, Methanol, Formaldehyde, and Acetaldehyde emissions were calculated using performance test data from February 10-16, 2016 at a sister facility, Morehouse. A 25% safety factor was added to the test data to calculate emissions.

### 3.1.10. Screened Materials Return System

$PM_{10}$ and $PM_{2.5}$ emissions were calculated using vendor data. VOC, Methanol, Formaldehyde, and Acetaldehyde emissions were calculated using performance test data from February 10-16, 2016 at a sister facility, Morehouse. A 25% safety factor was added to the test data to calculate emissions.

### 3.1.11. Pellet Loading System Pneumatic System Filter

$PM_{10}$ and $PM_{2.5}$ emissions were calculated using data from stack testing conducted on March 12 -15, 2019 at a sister facility, Morehouse. VOC emissions were calculated using data from stack testing conducted at Amite in November 2018. Methanol, Formaldehyde, and Acetaldehyde emissions were calculated using performance test data from February 10-16, 2016 at a sister facility, Morehouse. A 25% safety factor was added to all test data to calculate emissions.

### 3.1.12. Paved Roads (Fugitives)

Emissions from paved roads were calculated using an emission factor from AP-42 Section 13.2.1 – Equation 1 (1/2011) and other information from AP-42 Tables 13.2.1-1, 13.2.1-2, and 13.2.1-3.

### 3.1.13. Fire Pump Engine

$PM_{10}$, $PM_{2.5}$, $NO_X$, and VOC emissions were calculated using 40 Code of Federal Regulations (CFR) 60 Subpart IIII, Table 4. $SO_2$ and CO emissions were calculated using AP-42, Table 3.3-1 (1/96). Emissions of HAPs/TAPs were calculated using AP-42, Table 3.3-2 (1/96).

[3] Data from LaSalle BioEnergy LLC.

### 3.1.14. Emergency Generator

$PM_{10}$, $PM_{2.5}$, $NO_X$, and VOC emissions were calculated using 40 CFR 60 Subpart IIII, Table 4. $SO_2$ and CO emissions were calculated using AP-42, Table 3.3-1 (1/96). Emissions of HAPs/TAPs were calculated using AP-42, Table 3.3-2 (1/96).

Amite has evaluated the applicable Federal and Mississippi State air regulations that apply to the facility as well as to individual emission units. Included below is a brief overview of the applicable regulations. For more details, refer to Appendix A – Permit Application forms.

## 4.1. FEDERAL REGULATIONS

### 4.1.1. Prevention of Significant Deterioration – 40 CFR 52.21

40 CFR Part 52 establishes the federal Prevention of Significant Deterioration (PSD) Air Quality program. Because of the installation of the RTO and RCO to control VOC emissions, Amite is a minor source under the PSD program.

### 4.1.2. Title V Operating Permit Program

40 CFR 70 establishes the federal Title V operating permitting program. The Title V major source threshold for a facility is 100 tpy of criteria pollutants. A facility is also considered a Title V major source if emissions of individual or total HAP exceed major source thresholds of 10 tpy or 25 tpy, respectively. Amite is a major source under Title V because criteria pollutant emissions exceed 100 tpy.

### 4.1.1. Compliance Assurance Monitoring (CAM)

Under 40 CFR Part 64, Compliance Assurance Monitoring (CAM), facilities are required to prepare and submit monitoring plants for certain emission units with the initial or renewal Title V operating permit application. This rule requires pollutant specific monitoring for those emission units which meet the following criteria:

- The unit is located at a Title V air operating permit source;
- The unit is subject to an emission limitations or standard for the applicable regulated air pollutant, other than an emission limitation or standard that is exempt;
- The unit uses a control device to achieve compliance with any such emission limitation or standard; and
- The unit has potential pre-control device emissions of applicable regulated air pollutants that are equal to or greater than the Title V major source threshold of 100 tons per year. For Amite, the following sources are subject to CAM requirements: RTO and the new RCO.

### 4.1.2. New Source Performance Standards (NSPS) – 40 CFR Part 60

NSPS requires new, modified, or reconstructed sources in applicable source categories to control emissions to the level achievable by the best demonstrated technology as specified in the applicable provisions. A regulatory applicability determination and a summary of potentially applicable NSPS subparts for the emission sources associated with Amite is included in the permit application.

#### *4.1.2.1. 40 CFR 60 40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

This subpart applies to the owners and operators of stationary compression ignition (CI) internal combustion engines (ICE). The facility has two sources that must comply with NSPS Subpart IIII: AA-501 – Fire Pump Engine, and AA-502 – Emergency Generator. 40 CFR Subpart IIII sets specific emissions limitations based on the engine's type, fuel, and manufacture date.

#### *4.1.2.2. 40 CFR 60 Subpart A – General Provisions*

NSPS subpart A applies to stationary sources. All affected sources subject to an NSPS are also subject to the general provisions of NSPS Subpart A unless specifically excluded by the source-specific NSPS in accordance with 40 CFR 60.1. NSPS Subpart A has the following requirements for facilities subject to a source-specific NSPS:

- Initial construction/reconstruction notification
- Initial startup notification
- Performance tests
- Performance test date initial notification
- General monitoring requirements
- General recordkeeping requirements
- Semiannual monitoring system and/or excess emission reports
- General control device and work practice requirements

None of the source-specific NSPS subparts that are applicable to the proposed project exclude NSPS Subpart A – General Provisions. Therefore, the facility is subject to Subpart A.

### 4.1.3. National Emission Standards for Hazardous Air Pollutants – 40 CFR Part 61

National Emission Standards for Hazardous Air Pollutants (NESHAP) were developed by the EPA to provide pollutant specific control requirements. Amite is not subject to any NESHAP Part 61 standards.

### 4.1.4. National Emission Standards for Hazardous Air Pollutants for Source Categories – 40 CFR Part 63

A facility can be subject to one or National Emission Standards for Hazardous Air Pollutants (NESHAPS), if the total emissions of all regulated hazardous air pollutants (HAPs) for the facility exceeds 25 tpy, or total emissions for an individual regulated HAP exceed 10 tpy. Such a source is referenced as a "major source" for the purposes of NESHAPs applicability. A facility that is not a major source is referred as "area source". It has been assumed that Amite is an area source of HAPs because HAP emissions are controlled by the RCO.

#### *4.1.4.1. 40 CFR 63 Subpart A – General Provisions*

The facility includes sources subject to individual MACT subparts, and consequently is subject to the requirements of Subpart A. These requirements include general notifications, testing requirements, and monitoring requirements.

#### *4.1.4.2. 40 CFR 63 Subpart ZZZZ – NESHAP for Stationary Reciprocating Internal Combustion Engines*

This subpart applies to stationary reciprocating internal engines (RICE). The following ICE are subject to this regulation: AA-501 – Fire Pump Engine, and AA-502 – Emergency Generator.

### 4.1.5. Stratospheric Ozone Protection - 40 CFR Part 82

40 CFR 82 Subpart F has requirements for facilities that own or operate refrigeration, industrial refrigeration, or comfort cooling equipment containing Class I or Class II substance containing refrigerants.

## 4.2. MISSISSIPPI STATE REGULATIONS

Applicability of Mississippi state regulations is addressed in the following section.

### 4.2.1. 11 Miss. Admin. Code Pt. 2, Ch. 2, Rule 2.2

This regulation addresses weekly observations for visible emissions.

### 4.2.2. 11 Miss. Admin. Code Pt. 2, Ch. 1, Rule 1.3

This regulation addresses particulate matter as related to opacity.

### 4.2.3. 11 Miss. Admin. Code Pt. 2, Ch. 1, Rule 1.4

This regulation limits emissions of $SO_2$ from fuel burning and processes.

# APPENDIX A: APPLICATION FOR AIR POLLUTION CONTROL PERMIT

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Facility (Agency Interest) Information** — **Section A**

**1. Name, Address, and Location of Facility**

A. Owner/Company Name: Amite BioEnergy LLC

B. Facility Name (if different than A. above): N/A

C. Facility Air Permit No. (if known): 0080-00031

D. Agency Interest No. (if known): 57796

E. Physical Address

1. Street Address: 1763 Georgia Pacific Road #2
2. City: Gloster
3. State: MS
4. County: Amite
5. Zip Code: 39638
6. Telephone No.
7. Fax No.

F. Mailing Address *(if different from physical address)*

1. Street Address or P.O. Box: 1500 North 19th; Suite 501
2. City: Monroe
3. State: LA
4. Zip Code: 71201

G. Latitude/Longitude Data

1. Collection Point *(check one)*

[X] Plant Entrance [ ] Other:

2. Method of Collection *(check one)*

[ ] GPS Specify coordinate system (NAD 83, etc.)

[X] Map Interpolation (Google Earth etc.) [ ] Other:

3. Latitude (degrees/minutes/seconds): 31° 11’ 00”
4. Longitude (degrees/minutes/seconds): 91°02’ 00”
5. Elevation: 415 feet

H. SIC/NAICS Codes *(primary code listed first)*

SIC: 2499

NAICS: 32199

*(NAICS Code should correspond with the SIC Code directly above.)*

**2. Name and Address of Facility Contact**

A. Name: Brennen Beard Title: HSE Manager

B. Mailing Address

1. Street Address or P.O. Box: 1763 Georgia Pacific Road #2
2. City: Gloster
3. State: MS
4. Zip Code: 39638
5. Email: brennen.beard@draxbiomass.com
6. Telephone No.: 318-816-0461
7. Fax No.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Facility (Agency Interest) Information** — **Section A**

**3. Name and Address of Air Contact** *(if different from Facility Contact)*

A. Name: N/A  Title:

B. Mailing Address

1. Street Address:
2. City:
3. State:
4. County:
5. Zip Code:
6. Telephone No.
7. Fax No.

**4. Name and Address of the Responsible Official for the Facility**

The Responsible Official is defined as one of the following:

a. For a corporation, a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $ 25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated in accordance with corporate procedures.

b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively.

c. For a municipality, state, federal, or other public agency: either a principal executive officer or ranking elected official. For purposes of these regulations, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of EPA). A principal executive officer of a military facility includes the facility commander, chief executive officer, or any other similar person who performs similar policy or decision-making functions for the institution.

A. Name: Amber D. Bouska  Title : VP HSE North America

B. Mailing Address

1. Street Address: 1500 North 19th Street
2. City : Monroe
3. State: LA
4. Zip Code: 71201
5. Email: amber.bouska@draxbiomass.com
6. Telephone No.: 318-816-6590
7. Fax No.:

C. Is the person above a duly authorized representative? [X] Yes [ ] No

If yes, has written notification of such authorization been submitted to MDEQ?

[x] Yes [ ] No [ ] Request for authorization is attached

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Facility (Agency Interest) Information** — **Section A**

**5. Type of Permit Application *(Check all that apply)***

**State Permit to Construct (i.e., non-PSD or PSD avoidance)**

[ ] Initial Application [X] Modification

**New Source Review (NSR) Permit to Construct (includes both Prevention of Significant Deterioration (PSD) and Nonattainment)**

[ ] Initial Application [ ] Modification

N/A **Title V Operating Permit**

[X] Initial Application

[ ] Re-issuance: Are any modification to the permit/facility being requested? [ ] Yes [ ] No

*If yes, provide a separate sheet identifying the modification(s) and resulting change to emissions.*

[ ] Modification (*Specify type* ): [ ] Significant [ ] Minor [ ] Administrative

N/A **Synthetic Minor Operating Permit *(Appendix B must be completed and attached.)***

[ ] Initial Application

[ ] Re-issuance: Are any modification to the permit/facility being requested? [ ] Yes [ ] No

[ ] Modification

N/A **State Permit to Operate a Significant Minor Source *(defined in APC-S-2, Section I.C.25)***

[ ] Initial Application

[ ] Re-issuance: Are any modification to the permit/facility being requested? [ ] Yes [ ] No

[ ] Modification

**True Minor Determination**

[ ] Uncontrolled potential to emit air pollutants is below the Title V thresholds

**6. Process/Product Details**

A. List Significant Raw Materials (*if applicable* ):
Logs, wood chips, dry shavings, clean mill and forest residuals

B. List All Products (*if applicable* ):
Wood pellets

C. Brief Description of Principal Process(es):
Manufacture of wood pellets

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Facility (Agency Interest) Information** — **Section A**

## 6. Process/Product Details (continued)

D. Maximum Throughput for Raw Material(s) (*if applicable* ):

| Raw Materials | Throughput | Units |
|---|---|---|
| Logs, wood chips, dry shavings | 1,733,239.00 | US tons/year |
| | | |
| | | |
| | | |

E. Maximum Throughput for Principal Product(s) (*if applicable* ):

| Product | Throughput | Units |
|---|---|---|
| Wood Pellets | 660,000 | US ODT*/year |
| | | |
| | | |
| | | |

(*) = oven-dried tons (US tons)

## 7. Facility Operating Information

A. Number of employees at the facility: 3-Mar

| | Average Actual | Maximum Potential |
|---|---|---|
| B. Hours per day the facility will operate: | 24 | 24 |
| C. Days per week the facility will operate: | 7 | 7 |
| D. Weeks per year the facility will operate: | 52 | 52 |
| E. Months the facility will operate: | 12 | 12 |

## 8. Maps

A. Attach a topographical map of the area extending to at least 1/2 mile beyond the property boundaries. The map must show the outline of the property boundaries.

B. Attach a site map/diagram showing the outline of the property, and outline of all buildings and roadways on the site, and the location of each significant air emission source.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Facility (Agency Interest) Information** — **Section A**

**9. Zoning**

A. Is the facility (either existing or proposed) located in accordance with any applicable city and/or county zoning ordinances? If no, please explain.

Yes

B. Is the facility (either existing or proposed) required to obtain any zoning variance to locate/ expand the facility at this site? If yes, please explain.

No

**10. Risk management Plan**

A. Is the facility required to develop and register a risk management plan pursuant to Section 112(r), regulated under 40 CFR Part 68? [ ] Yes [X] No

B. If yes, to whom was the plan submitted? _____

**11. *Is confidential information being submitted with this application?*** [ ] Yes [X] No

If so, please follow the procedures outlined in the Mississippi Code Ann. Sections 49-17-39 and 17-17-27(6), as outlined in MCEQ-2-"Regulation regarding the review and reproduction of public records".

**12. MS Secretary of State Registration / Certificate of Good Standing**

No permit will be issued to a company that is not authorized to conduct business in Mississippi. If the company applying for the permit is a corporation, limited liability company, a partnership or a business trust, the application package should include proof of registration with the Mississippi Secretary of State and/or a copy of the company's Certificate of Good Standing. The name listed on the permit will include the company name as it is registered with the Mississippi Secretary of State.

It should be noted that for an application submitted in accordance with 11 Miss. Admin. Code Pt. 2, R. 2.8.B. to renew a State Permit to Operate or in accordance with 11 Miss. Admin. Code Pt. 2, R. 6.2.A(1)(c). to renew a Title V Permit to be considered timely and complete, the applicant shall be registered and in good standing with the Mississippi Secretary of State to conduct business in Mississippi.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Facility (Agency Interest) Information** — **Section A**

## 13. Certification

*Note: If approved by the MDEQ, a duly authorized representative (DAR) may sign the air permit application. The DAR must be listed in Section 4 of this application.*

*I certify to the best of knowledge and belief formed after reasonable inquiry; the statements and information in this application are true, complete, and accurate, and that as a responsible official, my signature shall constitute an agreement that the applicant assumes the responsibility for any alteration, additions, or changes in operation that may be necessary to achieve and maintain compliance with all applicable Rules and Regulations. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.*

Amber Bouska

Digitally signed by Amber Bouska
DN: cn=Amber Bouska, o=Drax, ou=VP HSE North America, email=amber.bouska@drax.com, c=US
Date: 2022.03.08 11:25:04 -06'00'

**Signature of Responsible Official/DAR**

March 8, 2022

**Date**

Amber D. Bouska

**Printed Name**

VP HSE North America

**Title**

# Section B.0: Emission Point Descriptions & Status

This form should list all the of the Emission Points and descriptions as proposed or as otherwise identified in an existing permit. This worksheet should be updated to reflect changes to the Status of the emission points over time. Emission Point ID's should match those assigned in the current MDEQ permit. Facility ID is optional. For proposed emission points, the facility should leave the Emission Point ID blank but may complete the Facility ID (if any). Under "Status," for Emission Points that are proposed or under construction but not yet operating, indicate their status as "Proposed." For emissions points already operating or for which construction has been certified complete, indicate their status as "Operating." Include all control devices for each emission point and the pollutant(s) the device controls. Control devices may be specified in general terms (e.g., baghouse, catalytic oxidizer, fabric filter, wet ESP, etc.). When an Emission Point is removed, indicate so by changing the "Status" to "Removed." Remove the emissions on the subsequent worksheets or indicate they are removed with a "-" for all pollutants.

| Emission Point ID | Facility ID | Description | Status | Control Device | Controlled Pollutant(s) | Control Device | Controlled Pollutant(s) | Control Device | Controlled Pollutant(s) |
|---|---|---|---|---|---|---|---|---|---|
| AA-102 | AA-102 | Log Chipper | Operating | | | | | | |
| AA-101 | AA-101 | Log Debarker | Operating | | | | | | |
| AA-201 | AA-201 | WESP, RTO, Burner, Dryer Furnace | Operating | RTO | VOC | | | | |
| AA-203b | AA-203b | Furnace SUSD Bypass Stack | Operating | | | | | | |
| AA-203c | AA-203c | Furnace Idling Bypass Stack | Operating | | | | | | |
| AA-204b | AA-204b | Dryer SUSD Bypass Stack | Operating | | | | | | |
| AA-302 | AA-302 | Primary Hammermill Feed Silo with bin vent | Operating | | | | | | |
| AA-303 | AA-303 | Six (6) Primary Hammermill Pneumatic Systems (A-F) | Operating | RCO | | | | | |
| AA-307A | AA-307A | Secondary Hammermill Pneumatic System A | Operating | RCO | VOC | Baghouse | PM | | |
| AA-307B | AA-307B | Secondary Hammermill Pneumatic System B | Operating | RCO | VOC | Baghouse | PM | | |
| AA-307C | AA-307C | Secondary Hammermill Pneumatic System C | Operating | RCO | VOC | Baghouse | PM | | |
| AA-305 | AA-305 | Secondary Hammermill Silo 1 with bin vent | Operating | | | Bin Vent | PM | | |
| AA-306 | AA-306 | Secondary Hammermill Silo 2 with bin vent | Operating | | | Bin Vent | PM | | |
| AA-308A | AA-308A | Pellet Mill/Cooler Pneumatic System A | Operating | RCO | VOC | Baghouse | PM | | |
| AA-308B | AA-308B | Pellet Mill/Cooler Pneumatic System B | Operating | RCO | VOC | Baghouse | PM | | |
| AA-308C | AA-308C | Pellet Mill/Cooler Pneumatic System C | Operating | RCO | VOC | Baghouse | PM | | |
| AA-308D | AA-308D | Pellet Mill/Cooler Pneumatic System D | Operating | RCO | VOC | Baghouse | PM | | |
| AA-308E | AA-308E | Pellet Mill/Cooler Pneumatic System E | Operating | RCO | VOC | Baghouse | PM | | |
| AA-308F | AA-308F | Pellet Mill/Cooler Pneumatic System F | Operating | RCO | VOC | Baghouse | PM | | |
| AA-301 | AA-301 | RCO, Burner | Operating | RCO | VOC | | | | |
| AA-309 | AA-309 | Starch Silo | Operating | | | Baghouse | PM | | |
| AA-401A | AA-401A | Pellet Storage Silo No. 1 with bin vent | Operating | | | Baghouse | PM | | |
| AA-401B | AA-401B | Pellet Storage Silo No. 2 with bin vent | Operating | | | Baghouse | PM | | |
| AA-401C | AA-401C | Screened Materials Return System | Operating | | | Baghouse | PM | | |
| AA-401D | AA-401D | Pellet Truck Loadout System | Operating | | | Baghouse | PM | | |
| | | Paved Road Fugitives | Operating | | | | | | |
| AA-501 | AA-501 | 250 hp Diesel Fire Pump Engine | Operating | | | | | | |
| AA-502 | AA-502 | 402 hp Emergency Diesel Generator | Operating | | | | | | |
| AA-304 | AA-304 | Dry Shavings Truck Dump | Operating | | | | | | |

## Section B.1: Maximum Uncontrolled Emissions (under normal operating conditions)

Maximum Uncontrolled Emissions are the emissions at maximum capacity and prior to (in the absence of) pollution control, emission-reducing process equipment, or any other emission reduction. Calculate the hourly emissions using the worst case hourly emissions for each pollutant. For each pollutant, calculate the annual emissions as if the facility were operating at maximum plant capacity without pollution controls for 8760 hours per year, unless otherwise approved by the Department. List Hazardous Air Pollutants (HAP) in Section B.3 and GHGs in Section B.4. Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Emissions > 0.01 TPY must be included. Please do not change the column widths on this table.

| Emission Point ID | TSP[1] (PM) | | PM-10[1] | | PM-2.5[1] | | $SO_2$ | | NOx | | CO | | VOC | | TRS[2] | | Lead | | Total HAPs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr |
| AA-102 | 0.75 | 3.29 | 0.25 | 1.10 | 0.06 | 0.26 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-101 | 0.04 | 0.19 | 0.02 | 0.09 | 0.005 | 0.02 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-201 | 82.68 | 362.13 | 82.68 | 362.13 | 71.13 | 311.54 | 4.14 | 18.13 | 38.65 | 169.30 | 100.98 | 442.28 | 10.31 | 45.14 | - | - | 0.01 | 0.03 | 6.60 | 28.92 |
| AA-203b | | | | | | | | | | | 19.80 | 0.50 | 0.56 | 0.01 | | | | | 1.31 | 0.03 |
| AA-203c | | | | | | | | | | | 9.90 | 2.48 | 0.28 | 0.07 | | | | | 0.66 | 0.16 |
| AA-204b | 50.91 | 1.27 | 50.91 | 1.27 | 50.91 | 1.27 | 3.47 | 0.09 | 62.48 | 1.56 | 81.00 | 2.02 | 108.77 | 2.72 | | | | | 9.75 | 0.24 |
| AA-302 | 0.19 | 0.84 | 0.19 | 0.84 | 0.19 | 0.84 | - | - | - | - | - | - | 1.48 | 6.50 | - | - | - | - | 0.29 | 1.27 |
| AA-303 | 0.52 | 2.27 | 0.52 | 2.27 | 0.38 | 1.68 | - | - | - | - | - | - | 30.37 | 133.04 | - | - | - | - | 0.78 | 3.44 |
| AA-307A | 0.13 | 0.58 | 0.13 | 0.58 | 0.11 | 0.50 | - | - | - | - | - | - | 8.84 | 38.72 | - | - | - | - | 0.17 | 0.73 |
| AA-307B | 0.13 | 0.58 | 0.13 | 0.58 | 0.11 | 0.50 | - | - | - | - | - | - | 8.84 | 38.72 | - | - | - | - | 0.17 | 0.73 |
| AA-307C | 0.13 | 0.58 | 0.13 | 0.58 | 0.11 | 0.50 | - | - | - | - | - | - | 8.84 | 38.72 | - | - | - | - | 0.17 | 0.73 |
| AA-305 | 0.19 | 0.84 | 0.19 | 0.84 | 0.19 | 0.84 | - | - | - | - | - | - | 1.32 | 5.79 | - | - | - | - | 0.26 | 1.14 |
| AA-306 | 0.19 | 0.84 | 0.19 | 0.84 | 0.19 | 0.84 | - | - | - | - | - | - | 0.74 | 3.23 | - | - | - | - | 0.13 | 0.57 |
| AA-308A | 0.25 | 1.11 | 0.25 | 1.11 | 0.20 | 0.88 | - | - | - | - | - | - | 21.26 | 93.13 | - | - | - | - | 0.09 | 0.41 |
| AA-308B | 0.25 | 1.11 | 0.25 | 1.11 | 0.20 | 0.88 | - | - | - | - | - | - | 21.26 | 93.13 | - | - | - | - | 0.09 | 0.41 |
| AA-308C | 0.25 | 1.11 | 0.25 | 1.11 | 0.20 | 0.88 | - | - | - | - | - | - | 21.26 | 93.13 | - | - | - | - | 0.09 | 0.41 |
| AA-308D | 0.25 | 1.11 | 0.25 | 1.11 | 0.20 | 0.88 | - | - | - | - | - | - | 21.26 | 93.13 | - | - | - | - | 0.09 | 0.41 |
| AA-308E | 0.25 | 1.11 | 0.25 | 1.11 | 0.20 | 0.88 | - | - | - | - | - | - | 21.26 | 93.13 | - | - | - | - | 0.09 | 0.41 |
| AA-308F | 0.25 | 1.11 | 0.25 | 1.11 | 0.20 | 0.88 | - | - | - | - | - | - | 21.26 | 93.13 | - | - | - | - | 0.09 | 0.41 |
| AA-301 | 0.10 | 0.46 | 0.10 | 0.46 | 0.10 | 0.46 | 0.01 | 0.04 | 1.37 | 6.01 | 1.15 | 5.05 | 0.08 | 0.33 | - | - | 2.47E-08 | 1.08E-07 | 0.03 | 0.11 |
| AA-309 | 0.0001 | 0.0002 | 0.0001 | 0.0002 | 0.0001 | 0.0002 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401A | 0.04 | 0.17 | 0.04 | 0.17 | 0.04 | 0.17 | - | - | - | - | - | - | 1.00 | 4.36 | - | - | - | - | 0.20 | 0.86 |
| AA-401B | 0.04 | 0.17 | 0.04 | 0.17 | 0.04 | 0.17 | - | - | - | - | - | - | 1.00 | 4.36 | - | - | - | - | 0.20 | 0.86 |
| AA-401C | 0.96 | 4.20 | 0.96 | 4.20 | 0.96 | 4.20 | - | - | - | - | - | - | 0.20 | 0.87 | - | - | - | - | 0.04 | 0.17 |
| AA-401D | 0.17 | 0.74 | 0.17 | 0.74 | 0.13 | 0.55 | - | - | - | - | - | - | 2.21 | 9.67 | - | - | - | - | 0.39 | 1.69 |
| Truck Dump | 0.01 | 0.04 | 0.01 | 0.04 | 0.001 | 0.01 | - | - | - | - | - | - | - | - | - | - | - | - | | |
| Paved Roads | 0.66 | 2.87 | 0.66 | 2.87 | 0.16 | 0.71 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-501 | 0.08 | 0.004 | 0.08 | 0.004 | 0.08 | 0.004 | 0.51 | 0.03 | 1.65 | 0.08 | 1.67 | 0.08 | 1.65 | 0.08 | - | - | - | - | 0.01 | 0.0003 |
| AA-502 | 0.13 | 0.01 | 0.13 | 0.01 | 0.13 | 0.01 | 0.82 | 0.04 | 2.64 | 0.13 | 2.31 | 0.12 | 2.64 | 0.13 | - | - | - | - | 0.01 | 0.001 |
| AA-304 | 0.01 | 0.04 | 0.01 | 0.04 | 0.001 | 0.006 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Totals** | **139.58** | **388.79** | **139.05** | **386.49** | **126.25** | **330.32** | **8.96** | **18.32** | **106.81** | **177.09** | **216.81** | **452.52** | **316.70** | **891.25** | **0.00** | **0.00** | **0.01** | **0.03** | **21.71** | **44.15** |

[1] **Condensables:** Include condensable particulate matter emissions in particulate matter calculations for PM-10 and PM-2.5, but not for TSP (PM).

[2] **TRS:** Total reduced sulfur (TRS) is the sum of the sulfur compounds hydrogen sulfide ($H_2S$), methyl mercaptan ($CH_4S$), dimethyl sulfide ($C_2H_6S$), and dimethyl disulfide ($C_2H_6S_2$).

[3] Uncontrolled emissions from the RTO are lower for some pollutants compared to the proposed allowable emissions because the inclusion of the RTO controls CO and VOC emissions, but the combustion emissions from the RTO burner result in an increase in other pollutants.

[4] Uncontrolled emissions from the RCO include the RCO burner only.

## Section B.2: Proposed Allowable Emissions

Proposed Allowable Emissions (Potential to Emit) are those emissions the facility is currently permitted to emit as limited by a specific permit requirement or federal/state standard (e.g., a MACT standard); or the emission rate at which the facility proposes to emit considering emissions control devices, restrictions to operating rates/hours, or other requested permit limits that reduce the maximum emission rates. Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Additional columns may be added if there are regulated pollutants (other than HAPs and GHGs) emitted at the facility.

| Emission Point ID | TSP[1] (PM) | | PM-10[1] | | PM-2.5[1] | | $SO_2$ | | NOx | | CO | | VOC | | TRS[2] | | Lead | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr |
| AA-102 | 0.04 | 0.16 | 0.01 | 0.05 | 0.003 | 0.01 | | | | | | | | | | | | |
| AA-101 | 0.04 | 0.19 | 0.02 | 0.09 | 0.005 | 0.02 | | | | | | | | | | | | |
| AA-201 | 3.68 | 16.12 | 3.68 | 16.12 | 3.68 | 16.12 | 11.58 | 50.70 | 20.61 | 90.29 | 43.23 | 189.36 | 10.31 | 45.14 | - | - | 0.0001 | 0.001 |
| AA-203b | | | | | | | | | | | 19.80 | 0.50 | 0.56 | 0.01 | | | | |
| AA-203c | | | | | | | | | | | 9.90 | 2.48 | 0.28 | 0.07 | | | | |
| AA-204b | 50.91 | 1.27 | 50.91 | 1.27 | 50.91 | 1.27 | 3.47 | 0.09 | 62.48 | 1.56 | 81.00 | 2.02 | 108.77 | 2.72 | | | | |
| AA-302 | 0.19 | 0.84 | 0.19 | 0.84 | 0.19 | 0.84 | - | - | - | - | - | - | 1.48 | 6.50 | - | - | - | - |
| AA-303 | Emissions captured under the RCO | | | | | | | | | | | | | | | | | |
| AA-307A | Emissions captured under the RCO | | | | | | | | | | | | | | | | | |
| AA-307B | Emissions captured under the RCO | | | | | | | | | | | | | | | | | |
| AA-307C | Emissions captured under the RCO | | | | | | | | | | | | | | | | | |
| AA-305 | 0.19 | 0.84 | 0.19 | 0.84 | 0.19 | 0.84 | - | - | - | - | - | - | 1.32 | 5.79 | - | - | - | - |
| AA-306 | 0.19 | 0.84 | 0.19 | 0.84 | 0.19 | 0.84 | - | - | - | - | - | - | 0.74 | 3.23 | - | - | - | - |
| AA-308A | Emissions captured under the RCO | | | | | | | | | | | | | | | | | |
| AA-308B | Emissions captured under the RCO | | | | | | | | | | | | | | | | | |
| AA-308C | Emissions captured under the RCO | | | | | | | | | | | | | | | | | |
| AA-308D | Emissions captured under the RCO | | | | | | | | | | | | | | | | | |
| AA-308E | Emissions captured under the RCO | | | | | | | | | | | | | | | | | |
| AA-308F | Emissions captured under the RCO | | | | | | | | | | | | | | | | | |
| AA-301 | 2.78 | 12.19 | 1.52 | 6.65 | 0.94 | 4.12 | 0.01 | 0.03 | 0.93 | 4.06 | 12.32 | 53.97 | 8.58 | 37.58 | - | - | 2.47E-08 | 1.08E-07 |
| AA-309 | 0.0001 | 0.0002 | 0.0001 | 0.0002 | 0.0001 | 0.0002 | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401A | 0.04 | 0.17 | 0.04 | 0.17 | 0.04 | 0.17 | - | - | - | - | - | - | 1.00 | 4.36 | - | - | - | - |
| AA-401B | 0.04 | 0.17 | 0.04 | 0.17 | 0.04 | 0.17 | - | - | - | - | - | - | 1.00 | 4.36 | - | - | - | - |
| AA-401C | 0.96 | 4.20 | 0.96 | 4.20 | 0.96 | 4.20 | - | - | - | - | - | - | 0.20 | 0.87 | - | - | - | - |
| AA-401D | 0.17 | 0.74 | 0.17 | 0.74 | 0.13 | 0.55 | - | - | - | - | - | - | 2.21 | 9.67 | - | - | - | - |
| Truck Dump | 0.01 | 0.04 | 0.01 | 0.04 | 0.001 | 0.01 | - | - | - | - | - | - | - | - | - | - | - | - |
| Paved Roads | 0.66 | 2.87 | 0.66 | 2.87 | 0.16 | 0.71 | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-501 | 0.08 | 0.004 | 0.08 | 0.004 | 0.08 | 0.004 | 0.51 | 0.03 | 1.65 | 0.08 | 1.67 | 0.08 | 1.65 | 0.08 | - | - | - | - |
| AA-502 | 0.13 | 0.007 | 0.13 | 0.01 | 0.13 | 0.01 | 0.82 | 0.04 | 2.64 | 0.13 | 2.31 | 0.12 | 2.64 | 0.13 | - | - | - | - |
| AA-304 | 0.01 | 0.04 | 0.001 | 0.006 | | | | | | | | | | | | | | |
| **Totals** | **60.04** | **40.32** | **58.78** | **34.78** | **57.65** | **29.86** | **16.39** | **50.89** | **88.32** | **96.12** | **170.24** | **248.52** | **140.74** | **120.53** | **0.00** | **0.00** | **1.40E-04** | **6.14E-04** |

[1] **Condensables:** Include condensable particulate matter emissions in particulate matter calculations for PM-10 and PM-2.5, but not for TSP (PM).

[2] **TRS:** Total reduced sulfur (TRS) is the sum of the sulfur compounds hydrogen sulfide ($H_2S$), methyl mercaptan ($CH_4S$), dimethyl sulfide ($C_2H_6S$), and dimethyl disulfide ($C_2H_6S_2$).

## Section B.3: Proposed Allowable Hazardous Air Pollutants (HAPs)

In the table below, report the Proposed Allowable Emissions (Potential to Emit) for each HAP from each regulated emission unit if the HAP > 0.0001 tpy. Each facility-wide Individual HAP total and the facility-wide Total HAPs shall be the sum of all HAP sources. Use the HAP nomenclature as it appears in the Instructions. Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. For each HAP listed, fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected or the pollutant is emitted in a quantity less than the threshold amounts described above. Additional columns may be added as necessary to address each HAP.

| Emission Point ID | Total HAPs | | Acetaldehyde | | Acrolein | | Benzene | | Carbon Tetrachloride | | Chlorine | | Chlorobenzene | | Chloroform | | Chloromethane | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr |
| Chipper | | | | | | | | | | | | | | | | | | |
| Debarker | | | | | | | | | | | | | | | | | | |
| AA-201 | 4.00 | 17.52 | 0.35 | 1.54 | 0.15 | 0.65 | 0.05 | 0.21 | 0.001 | 0.002 | 0.01 | 0.04 | 0.0004 | 0.002 | 0.0003 | 0.001 | 0.0003 | 0.001 |
| AA-203b | 1.31 | 0.03 | 2.74E-02 | - | 1.32E-01 | 3.30E-03 | 1.39E-01 | 3.47E-03 | - | - | 2.61E-02 | 6.52E-04 | - | - | - | - | - | - |
| AA-203c | 0.66 | 0.16 | 1.37E-02 | 3.42E-03 | 6.60E-02 | 1.65E-02 | 6.93E-02 | 1.73E-02 | 7.43E-04 | 1.86E-04 | 1.30E-02 | 3.26E-03 | 5.45E-04 | 1.36E-04 | 4.62E-04 | 1.16E-04 | 3.80E-04 | 9.49E-05 |
| AA-204b | 9.75 | 0.24 | 1.74 | 0.04 | 0.53 | 0.01 | 0.18 | 0.004 | | | | | | | | | | |
| AA-302 | 0.29 | 1.27 | 0.07 | 0.33 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-303 | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-307A | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-307B | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-305 | 0.26 | 1.14 | 0.07 | 0.30 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-306 | 0.13 | 0.57 | 0.03 | 0.15 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-308A | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308B | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308C | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308D | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308E | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308F | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-301 | 3.55 | 15.55 | 0.26 | 1.16 | 0.10 | 0.44 | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-309 | 0.00 | 0.00 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401A | 0.20 | 0.86 | 0.05 | 0.22 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401B | 0.20 | 0.86 | 0.05 | 0.22 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401C | 0.04 | 0.17 | 0.01 | 0.04 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401D | 0.39 | 1.69 | 0.10 | 0.43 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Paved Roads | 0.00 | 0.00 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-501 | 0.007 | 0.0003 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-502 | 0.005 | 0.0003 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Totals:** | **20.78** | **40.07** | **2.78** | **4.43** | **0.98** | **1.12** | **0.43** | **0.24** | **0.001** | **0.002** | **0.05** | **0.04** | **0.001** | **0.002** | **0.0008** | **0.002** | **0.0006** | **0.001** |

| Emission Point ID | Dibromoethane (1,2-) | | Dichloroethane (1,2-) | | Dichloromethane | | Dichloropropane (1,2-) | | Ethylbenzene | | Formaldehyde | | n-Hexane | | Hydrochloric Acid | | Mercury (and compounds) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr |
| Chipper | | | | | | | | | | | | | | | | | | |
| Debarker | | | | | | | | | | | | | | | | | | |
| AA-201 | 0.001 | 0.003 | 0.0003 | 0.001 | 0.003 | 0.01 | 0.000 | 0.002 | 0.000 | 0.002 | 0.88 | 3.86 | 0.03 | 0.13 | 0.11 | 0.49 | 0.000 | 0.002 |
| AA-203b | - | - | - | - | 0.01 | 2.39E-04 | - | - | - | - | 0.15 | 3.63E-03 | - | - | 0.63 | 0.02 | - | - |
| AA-203c | 9.08E-04 | 2.27E-04 | 4.79E-04 | 1.20E-04 | 4.79E-03 | 1.20E-03 | 5.45E-04 | 1.36E-04 | 5.12E-04 | 1.28E-04 | 7.26E-02 | 1.82E-02 | | | 3.14E-01 | 7.84E-02 | 5.78E-05 | 1.44E-05 |
| AA-204b | | | | | | | | | | | 3.24 | 0.08 | | | | | | |
| AA-302 | - | - | - | - | - | - | - | - | - | - | 0.14 | 0.62 | - | - | - | - | - | - |
| AA-303 | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-307A | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-307B | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-305 | - | - | - | - | - | - | - | - | - | - | 0.13 | 0.55 | - | - | - | - | - | - |
| AA-306 | - | - | - | - | - | - | - | - | - | - | 0.06 | 0.28 | - | - | - | - | - | - |
| AA-308A | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308B | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308C | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308D | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308E | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308F | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-301 | - | - | - | - | - | - | - | - | - | - | 0.25 | 1.09 | 0.01 | 0.05 | 0.06 | 0.25 | - | - |
| AA-309 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401A | - | - | - | - | - | - | - | - | - | - | 0.09 | 0.41 | - | - | - | - | - | - |
| AA-401B | - | - | - | - | - | - | - | - | - | - | 0.09 | 0.41 | - | - | - | - | - | - |
| AA-401C | - | - | - | - | - | - | - | - | - | - | 0.02 | 0.08 | - | - | - | - | - | - |
| AA-401D | - | - | - | - | - | - | - | - | - | - | 0.19 | 0.83 | - | - | - | - | - | - |
| Paved Roads | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-501 | - | - | - | - | - | - | - | - | - | - | 0.002 | 0.0001 | - | - | - | - | - | - |
| AA-502 | - | - | - | - | - | - | - | - | - | - | 0.001 | 0.0001 | - | - | - | - | - | - |
| **Totals:** | **0.002** | **0.003** | **0.0008** | **0.002** | **0.018** | **0.02** | **0.001** | **0.002** | **0.001** | **0.002** | **5.32** | **8.24** | **0.04** | **0.19** | **1.11** | **0.83** | **0.000** | **0.002** |

## Section B.3: Proposed Allowable Hazardous Air Pollutants (HAPs)

In the table below, report the Proposed Allowable Emissions (Potential to Emit) for each HAP from each regulated emission unit if the HAP > 0.0001 tpy. Each facility-wide Individual HAP total and the facility-wide Total HAPs shall be the sum of all HAP sources. Use the HAP nomenclature as it appears in the Instructions. Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. For each HAP listed, fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected or the pollutant is emitted in a quantity less than the threshold amounts described above. Additional columns may be added as necessary to address each HAP.

| Emission Point ID | Naphthalene (and Methylnaphthalenes) | | Phenol | | PAH | | Proprionaldehyde | | Styrene | | Tetrachloroethylene | | Toluene | | Trichloroethane (1,1,1-) | | Trichloroethylene | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr |
| Chipper | | | | | | | | | | | | | | | | | | |
| Debarker | | | | | | | | | | | | | | | | | | |
| AA-201 | 0.001 | 0.005 | 0.683 | 2.991 | 0.0003 | 0.001 | 0.101 | 0.444 | 0.02 | 0.10 | 0.0004 | 0.002 | 0.01 | 0.05 | 0.0004 | 0.002 | 0.0004 | 0.002 |
| AA-203b | 3.20E-03 | 8.00E-05 | - | - | - | - | - | - | 0.06 | 1.57E-03 | - | - | 0.03 | 7.59E-04 | - | - | - | - |
| AA-203c | 1.60E-03 | 4.00E-04 | 8.42E-04 | 2.10E-04 | 4.61E-04 | 1.15E-04 | 1.01E-03 | 2.52E-04 | 3.14E-02 | 7.84E-03 | 6.27E-04 | 1.57E-04 | 1.52E-02 | 3.80E-03 | 5.12E-04 | 1.28E-04 | 4.95E-04 | 1.24E-04 |
| AA-204b | | | 0.65 | 0.02 | | | 0.30 | 0.01 | 0.01 | 0.0002 | | | 0.30 | 0.01 | | | | |
| AA-302 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-303 | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-307A | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-307B | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-305 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-306 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-308A | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308B | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308C | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308D | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308E | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308F | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-301 | - | - | 1.58 | 6.93 | - | - | 0.24 | 1.06 | - | - | - | - | 0.00002 | 0.0001 | - | - | - | - |
| AA-309 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401A | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401B | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401C | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401D | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Paved Roads | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-501 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-502 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Totals:** | **0.006** | **0.01** | **2.915** | **9.941** | **0.0008** | **0.002** | **0.646** | **1.514** | **0.12** | **0.11** | **0.001** | **0.002** | **0.36** | **0.06** | **0.001** | **0.002** | **0.001** | **0.002** |

| Emission Point ID | Trichlorofluoromethane | | Xylene | | Arsenic (and compounds) | | Barium (and compounds) | | Copper (and compounds) | | Lead compounds | | Manganese (and compounds) | | Nickel (and compounds) | | Phosphorus | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr |
| Chipper | | | | | | | | | | | | | | | | | | |
| Debarker | | | | | | | | | | | | | | | | | | |
| AA-201 | 0.00 | 0.02 | 0.0003 | 0.001 | 0.0001 | 0.0003 | 0.000 | 0.002 | 0.0001 | 0.001 | 0.0001 | 0.001 | 0.00 | 0.02 | 0.0001 | 0.000 | 0.0001 | 0.0003 |
| AA-203b | 0.01 | 3.38E-04 | - | - | - | - | 0.01 | 1.40E-04 | - | - | - | - | 0.05 | 1.32E-03 | - | - | - | - |
| AA-203c | 6.77E-03 | 1.69E-03 | 4.13E-04 | 1.03E-04 | 3.63E-04 | 9.08E-05 | 2.81E-03 | 7.01E-04 | 8.09E-04 | 2.02E-04 | 7.92E-04 | 1.98E-04 | 2.64E-02 | 6.60E-03 | 5.45E-04 | 1.36E-04 | 4.46E-04 | 1.11E-04 |
| AA-204b | | | 0.01 | 0.0003 | | | | | | | | | | | | | | |
| AA-302 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-303 | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-307A | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-307B | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-305 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-306 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-308A | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308B | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308C | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308D | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308E | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-308F | Emissions captured under the RCO. | | | | | | | | | | | | | | | | | |
| AA-301 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.00003 | 0.0001 | - | - |
| AA-309 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401A | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401B | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401C | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-401D | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Paved Roads | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-501 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| AA-502 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Totals:** | **0.03** | **0.02** | **0.0118** | **0.002** | **0.0004** | **0.0004** | **0.009** | **0.003** | **0.0010** | **0.001** | **0.0009** | **0.001** | **0.08** | **0.03** | **0.0007** | **0.001** | **0.0005** | **0.0005** |

## Section B.3: Proposed Allowable Hazardous Air Pollutants (HAPs)

In the table below, report the Proposed Allowable Emissions (Potential to Emit) for each HAP from each regulated emission unit if the HAP > 0.0001 tpy. Each facility-wide Individual HAP total and the facility-wide Total HAPs shall be the sum of all HAP sources. Use the HAP nomenclature as it appears in the Instructions. Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. For each HAP listed, fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected or the pollutant is emitted in a quantity less than the threshold amounts described above. Additional columns may be added as necessary to address each HAP.

| Emission Point ID | Zinc (and compounds) | | Methanol | |
|---|---|---|---|---|
| | lb/hr | ton/yr | lb/hr | ton/yr |
| Chipper | | | | |
| Debarker | | | | |
| AA-201 | 0.001 | 0.01 | - | - |
| AA-203b | 0.014 | 3.47E-04 | | |
| AA-203c | 0.007 | 0.002 | | |
| AA-204b | | | 2.55 | 0.06 |
| AA-302 | - | - | 0.07 | 0.33 |
| AA-303 | Emissions captured under the RCO. | | | |
| AA-307A | Emissions captured under the RCO. | | | |
| AA-307B | Emissions captured under the RCO. | | | |
| AA-305 | - | - | 0.07 | 0.30 |
| AA-306 | - | - | 0.03 | 0.15 |
| AA-308A | Emissions captured under the RCO. | | | |
| AA-308B | Emissions captured under the RCO. | | | |
| AA-308C | Emissions captured under the RCO. | | | |
| AA-308D | Emissions captured under the RCO. | | | |
| AA-308E | Emissions captured under the RCO. | | | |
| AA-308F | Emissions captured under the RCO. | | | |
| AA-301 | - | - | 2.92 | 12.81 |
| AA-309 | - | - | - | - |
| AA-401A | - | - | 0.05 | 0.22 |
| AA-401B | - | - | 0.05 | 0.22 |
| AA-401C | - | - | 0.01 | 0.04 |
| AA-401D | - | - | 0.10 | 0.43 |
| Paved Roads | - | - | - | - |
| AA-501 | - | - | - | - |
| AA-502 | - | - | - | - |
| **Totals:** | **0.022** | **0.01** | **5.85** | **14.56** |

## Section B.4: Greenhouse Gas Emissions

Applicants must report potential emission rates in SHORT TONS per year, as opposed to metric tons required by Part 98. Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit.

| | | $CO_2$ (non-biogenic) ton/yr | $CO_2$ (biogenic)[2] ton/yr | $N_2O$ ton/yr | $CH_4$ ton/yr | $SF_6$ ton/yr | PFC/HFC[3] ton/yr | | | | Total GHG Mass Basis ton/yr[5] | Total $CO_2e$ ton/yr[6] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Emission Point ID** | **GWPs [1]** | **1** | **1** | **298** | **25** | **22,800** | **footnote 4** | | | | | |
| AA-201 | **mass GHG** | 12298.76 | | 0.02 | 0.23 | | | | | | **12299.01** | |
| | **$CO_2e$** | 12298.76 | | 6.91 | 5.79 | | | | | | | **12311.46** |
| AA-301 | **mass GHG** | 7174.27 | | 0.01 | 0.14 | | | | | | **7174.42** | |
| | **$CO_2e$** | 7174.27 | | 4.03 | 3.38 | | | | | | | **7181.68** |
| AA-501 | **mass GHG** | 14.27 | | 0.0001 | 0.001 | | | | | | **14.27** | |
| | **$CO_2e$** | 14.27 | | 0.03 | 0.01 | | | | | | | **14.32** |
| AA-502 | **mass GHG** | 22.95 | | 0.0002 | 0.001 | | | | | | **22.95** | |
| | **$CO_2e$** | 22.95 | | 0.06 | 0.02 | | | | | | | **23.02** |
| | | | | | | | | | | **mass GHG** | **19,510.66** | |
| | | | | | | | | | | **$CO_2e$** | | **19,530** |

**FACILITY TOTAL**

[1] **GWP** (Global Warming Potential): Applicants must use the most current GWPs codified in Table A-1 of 40 CFR part 98. GWPs are subject to change, therefore, applicants need to check 40 CFR 98 to confirm GWP values.

[2] Biogenic CO2 is defined as carbon dioxide emissions resulting from the combustion or decomposition of non-fossilized and biodegradable organic material originating from plants, animals, or micro-organisms.

[3] For **HFCs** or **PFCs** describe the specific HFC or PFC compound and use a separate column for each individual compound.

[4] For each new compound, enter the appropriate GWP for each HFC or PFC compound from Table A-1 in 40 CFR 98.

[5] Greenhouse gas emissions on a **mass basis** is the ton per year greenhouse gas emission before adjustment with its GWP. Do not include biogenic $CO_2$ in this total.

[6] **$CO_2e$** means Carbon Dioxide Equivalent and is calculated by multiplying the TPY mass emissions of the greenhouse gas by its GWP. Do not include biogenic $CO_2e$ in this total.

## Section B.5: Stack Parameters and Exit Conditions

Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit.

| Emission Point ID | Orientation (H-Horizontal V=Vertical) | Rain Caps | Height Above Ground | Base Elevation | Exit Temp. | Inside Diameter or Dimensions | Velocity | Moisture by Volume | Geographic Position (degrees/minutes/seconds) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | (Yes or No) | (ft) | (ft) | ($^{o}$F) | (ft) | (ft/sec) | (%) | Latitude | Longitude |
| *Note: Modeling was not required; therefore, stack parameters are not provided. | | | | | | | | | | |

[1] A WAAS-capable GPS receiver should be used and in the WGS84 or NAD83 coordinate system. Coordinates listed are in Zone 15.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Fuel Burning Equipment - External Combustion Sources — Section C

### 1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-203a/AA-203b/AA-203c

B. Equipment Description: Wood Fired Furnace/Wood Fired Furnace Bypass Stack

C. Manufacturer: Dieffenbacher

D. Model Yr and No.: N/A

E. Maximum Heat Input (higher heating value): 165 MMBtu/hr

F. Nominal Heat Input Capacity: N/A MMBtu/hr

G. For units subject to NSPS Db, is the heat release rate > 70,000 Btu/hr-ft3? [ ] Yes [ ] No

H. Use: [ ] Electrical Generation [ ] Steam [X] Process Heat [ ] Space Heat [ ] Standby/Emergency [ ] Other (describe):

I. Heat Mechanism: [X] Direct [ ] Indirect

J. Burner Type (e.g., pulverized coal, forced draft, atomizing oil, low-NOx, etc.): Spreader stoker

K. Additional Design Controls (e.g., FGR, etc.): N/A

L. Status: [X] Operating [ ] Proposed [ ] Under Construction

M. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: August 2015

### 2. Fuel Type

Complete the following table, identifying each type of fuel and the amount used. Specify the units for heat content, hourly usage, and yearly usage.

| FUEL TYPE[1] | HEAT CONTENT | % SULFUR | % ASH | MAXIMUM HOURLY USAGE | MAXIMUM YEARLY USAGE |
|---|---|---|---|---|---|
| biomass | 4500 BTU/lb | 0.0056 | 3 | 53.35 tons | 467,316 tons |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Please list any fuel components that are hazardous air pollutants and the percentage in the fuel:

[1] Boilers burning solid waste may be considered "solid waste incinerators" for purposes of complying with federal regulations. However, you are only required to complete Section C, not I, of this application as long as the wastes combusted are indicated in the table above.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Fuel Burning Equipment - Internal Combustion Engines — Section D

### 1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-501

B. Equipment Description: Emergency Pump Engine

C. Manufacturer: John Deere Power Systems

D. Model Yr and No.: 2013 JU6H-UFADR8

E. Maximum Heat Input (higher heating value): 0.64 MMBtu/hr

F. Rated Power: 250 hp 187 kW

G. Use: [ ] Non-Emergency [X] Emergency

**Complete H through K for Reciprocating (Piston) Internal Combustion Engines**

H. Displacement per cylinder: [X] <10 Liters [ ] 10 to <30 Liters [ ] ≥ 30 Liters

I. Engine Ignition Type: [ ] Spark Ignition [X] Compression Ignition

J. Engine Burn Type: [X] 4-stroke [ ] 2-stroke [ ] Rich Burn [ ] Lean Burn
*(check all that apply)*

K. Design Controls (e.g., catalytic converter, diesel particulate, etc.): N/A

**Complete L through M for Stationary Gas Turbines**

L. Turbine Type: [ ] Simple Cycle [ ] Regenerative Cycle [ ] Combined Cycle
[ ] Combined Heat and Power (Cogeneration)

M. Controls: [ ] Water-steam injection [ ] Lean Premix
[ ] Other Controls (SCR, oxidation catalyst, etc.): _____

N. Status: [ ] Operating [ ] Proposed [ ] Under Construction

O. Engine Manufactured Date: _____ N. Engine Order Date: _____

P. If an emergency engine, can your engine be operated for Emergency Demand Response per the NERC Reliability Standard? [ ] Yes [ ] No

Q. If an emergency engine, is it used for peak shaving or non-emergency demand response? [ ] Yes [ ] No

R. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: _____

### 2. Fuel Type

Complete the following table, identifying each type of fuel and the amount used. Specify units of measurement.

| FUEL TYPE | HEAT CONTENT | % SULFUR | % ASH | MAXIMUM HOURLY USAGE | MAXIMUM YEARLY USAGE |
|---|---|---|---|---|---|
| Ultra-Low Sulfur Diesel | 140,000 Btu/gal | 15 ppm | 0.02 | 4.6 gal | 2,290 gal |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Fuel Burning Equipment - Internal Combustion Engines — Section D

### 1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-502

B. Equipment Description: Emergency Generator Engine

C. Manufacturer: Generac Industrical Power  D. Model Yr and No.: 2015 SD 300

E. Maximum Heat Input (higher heating value): 0.81 MMBtu/hr

F. Rated Power: 402 hp 300 kW

G. Use: [ ] Non-Emergency [X] Emergency

**Complete H through K for Reciprocating (Piston) Internal Combustion Engines**

H. Displacement per cylinder: [ ] <10 Liters [X] 10 to <30 Liters [ ] ≥ 30 Liters

I. Engine Ignition Type: [ ] Spark Ignition [X] Compression Ignition

J. Engine Burn Type: [X] 4-stroke [ ] 2-stroke [ ] Rich Burn [ ] Lean Burn
*(check all that apply)*

K. Design Controls (e.g., catalytic converter, diesel particulate, etc.): N/A

**Complete L through M for Stationary Gas Turbines**

L. Turbine Type: [ ] Simple Cycle [ ] Regenerative Cycle [ ] Combined Cycle
[ ] Combined Heat and Power (Cogeneration)

M. Controls: [ ] Water-steam injection [ ] Lean Premix
[ ] Other Controls (SCR, oxidation catalyst, etc.): _____

N. Status: [ ] Operating [ ] Proposed [ ] Under Construction

O. Engine Manufactured Date: _____  N. Engine Order Date: _____

P. If an emergency engine, can your engine be operated for Emergency Demand Response per the NERC Reliability Standard? [ ] Yes [ ] No

Q. If an emergency engine, is it used for peak shaving or non-emergency demand response? [ ] Yes [ ] No

R. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: _____

### 2. Fuel Type

Complete the following table, identifying each type of fuel and the amount used. Specify units of measurement.

| FUEL TYPE | HEAT CONTENT | % SULFUR | % ASH | MAXIMUM HOURLY USAGE | MAXIMUM YEARLY USAGE |
|---|---|---|---|---|---|
| Ultra-Low Sulfur Diesel | 140,000 Btu/gal | 15 ppm | 0.02 | 17 gal | 8570 gal |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Manufacturing Processes — Section E

### 1. Emission Point Description

A. Emission Point Designation (Ref. No.): **AA-202 - Five Green Hammermills - DELETE SOURCE**

B. Process Description: Five Green Hammermills

C. Manufacturer: _____ D. Model: _____

E. Maximum Design Capacity (specify units): _____
Equivalent to: _____ tons/hr

F. Status: ☐ Operating ☐ Proposed ☐ Under Construction

G. Operating Schedule (Actual): ____ hrs/day ____ days/week ____ weeks/yr

N. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: _____

### 2. Raw Material Input

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

### 3. Product Output

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 88 tons/hr | 88 tons/hr | 578,052 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Manufacturing Processes — Section E

### 1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-204a/AA-204b

B. Process Description: Wood Chip Rotary Dryer with 12.5 MMBTU/hr Wood Chip Rotary Dryer Bypass Stack (AA-204b).

C. Manufacturer: Dieffenbacher D. Model: Rotary Dyer

E. Maximum Design Capacity (specify units):
Equivalent to: 158 tons/hr

F. Status: [X] Operating [ ] Proposed [ ] Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

N. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: August 2015

### 2. Raw Material Input

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 158 tons/hr | 158 tons/hr | 1,266,000 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

### 3. Product Output

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 88 tons/hr | 53.3 tons/hr | 467,316 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Manufacturing Processes — Section E

### 1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-302

B. Process Description: Primary Hammermill Feed Silo with Bin Vent

C. Manufacturer: Hoffman D. Model: Dry Chip Silo

E. Maximum Design Capacity (specify units):
Equivalent to: 88 tons/hr

F. Status: [X] Operating [ ] Proposed [ ] Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

N. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: August 2015

### 2. Raw Material Input

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 71.31 tons/hr | 71.31 tons/hr | 624,700 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

### 3. Product Output

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 71.31 tons/hr | 71.31 tons/hr | 624,700 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Manufacturing Processes — Section E

### 1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-303 (A-F)

B. Process Description: Primary Hammermill Pneumatic System Vents (6 systems each with an emission point for a total of 6 emission points). Each system is equipped with a baghouse filter to control PM emissions. Emissions from these sources are routed to the RCO (AA-301).

C. Manufacturer: CPM - Roskamp D. Model: HM 5448

E. Maximum Design Capacity (specify units): _____
Equivalent to: 88 tons/hr

F. Status: [X] Operating [ ] Proposed [ ] Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

N. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: August 2015

### 2. Raw Material Input

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 71.31 tons/hr | 71.31 tons/hr | 624,700 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

### 3. Product Output

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 71.31 tons/hr | 71.31 tons/hr | 624,700 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Manufacturing Processes — Section E

### 1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-304

B. Process Description: Truck Dump

C. Manufacturer: _____ D. Model: _____

E. Maximum Design Capacity (specify units): _____
Equivalent to: _____ tons/hr

F. Status: [X] Operating [ ] Proposed [ ] Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

N. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: July 2020

### 2. Raw Material Input

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 53.35 tons/hr | 53.35 tons/hr | 467,216 tons/yr |
| | | | |
| | | | |
| | | | |
| | | | |

### 3. Product Output

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 53.35 tons/hr | 53.3 tons/hr | 467,216 tons/yr |
| | | | |
| | | | |
| | | | |
| | | | |

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Manufacturing Processes — Section E

### 1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-305

B. Process Description: Secondary Hammermill Feed Silo No.1 with Bin Vent

C. Manufacturer: Hoffman D. Model: Dry Chip Silo

E. Maximum Design Capacity (specify units):
Equivalent to: 88 tons/hr

F. Status: [X] Operating [ ] Proposed [ ] Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

N. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: August 2015

### 2. Raw Material Input

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 71.31 tons/hr | 71.31 tons/hr | 624,700 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

### 3. Product Output

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 71.31 tons/hr | 71.31 tons/hr | 624,700 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Manufacturing Processes — Section E

### 1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-306

B. Process Description: Secondary Hammermill Feed Silo No. 2 with Bin Vent

C. Manufacturer: Hoffman D. Model: Dry Chip Silo

E. Maximum Design Capacity (specify units):
Equivalent to: 88 tons/hr

F. Status: [X] Operating [ ] Proposed [ ] Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

N. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: August 2015

### 2. Raw Material Input

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 71.31 tons/hr | 71.31 tons/hr | 624,700 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

### 3. Product Output

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 71.31 tons/hr | 71.31 tons/hr | 624,700 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Manufacturing Processes — Section E

### 1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-307

B. Process Description: Three (3) Secondary Hammermill Pneumatic Systems A, B, & C. Each system is equipped with a baghouse filter to control PM emissions. Emissions from these sources are routed to the RCO (AA-301).

C. Manufacturer: CPM - Roskamp D. Model: HM 5448

E. Maximum Design Capacity (specify units):
Equivalent to: 88 tons/hr

F. Status: [X] Operating [ ] Proposed [ ] Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

N. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: August 2015

### 2. Raw Material Input

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 71.31 tons/hr | 71.31 tons/hr | 624,700 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

### 3. Product Output

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 71.31 tons/hr | 71.31 tons/hr | 624,700 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Manufacturing Processes — Section E

### 1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-308 (A though F)

B. Process Description: SIx (6) Pellet Mill / Cooler Pneumatic Systems A-F. Each system is equipped with a baghouse filter to control PM emissons. Emissions from these sources are routed to the RCO (AA-301).

C. Manufacturer: CPM - Roskamp D. Model: Pellet Cooler

E. Maximum Design Capacity (specify units):
Equivalent to: 528 tons/hr

F. Status: [X] Operating [ ] Proposed [ ] Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

N. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: August 2015

### 2. Raw Material Input

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 71.31 tons/hr | 71.31 tons/hr | 624,700 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

### 3. Product Output

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 71.31 tons/hr | 71.31 tons/hr | 624,700 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Manufacturing Processes — Section E

### 1. Emission Point Description

A. Emission Point Designation (Ref. No.): AA-401

B. Process Description: Two (2) Pellet Storage Silos, Screened Materials Return System, and Pellet Truck Loadout System. Emissions from all sources controlled by a common baghouse.

C. Manufacturer: Advance Conveying Technologies (ACT) D. Model: Pellet Silo

E. Maximum Design Capacity (specify units):
Equivalent to: 88 tons/hr

F. Status: [X] Operating [ ] Proposed [ ] Under Construction

G. Operating Schedule (Actual): 24 hrs/day 7 days/week 52 weeks/yr

N. Date of construction, reconstruction, or most recent modification (for existing sources) or date of anticipated construction: August 2015

### 2. Raw Material Input

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 71.31 tons/hr | 71.31 tons/hr | 624,700 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

### 3. Product Output

| MATERIAL | QUANTITY/HR AVERAGE | QUANTITY/HR MAXIMUM | QUANTITY/YEAR MAXIMUM |
|---|---|---|---|
| Wood | 71.31 tons/hr | 71.31 tons/hr | 624,700 tons/year |
| | | | |
| | | | |
| | | | |
| | | | |

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Baghouses/Fabric Filters** **Section L1**

**1. Oxidation System Equipment**

A. Emission Point Designation (Ref. No.): AA-303 (1-6)

B. Equipment Description (include the process(es) that adsorption controls emissions from):

Primary Hammermill Pneumatic Systems 1 – 6 [each system equipped with a baghouse filter to control particulate matter emissions; emissions from these sources are routed to the RCO (AA-301)]

C. Manufacturer: _____ D. Model: _____

E. Status: [X] Operating [ ] Proposed [ ] Under Construction

**2. Baghouse Data**

A. Cloth Area _____ $ft^2$ B. Air to cloth ratio _____ $acfm/ft^2$

C. Type of bag: [ ] Woven [ ] Felted [ ] Membrane [ ] Other

D. Filter Material _____ E. Max. Filter Operating Temp. _____ $^oF$

F. No. of compartments _____ G. No. of bags per compartment: _____

H. Bag Length _____ ft I. Bag diameter _____ ft

J. Pressure drop: _____ in $H_20$ K. Inlet air flow rate: _____ acfm

L. Air temperature 70 $^oF$ M. Efficiency (PM): 99 %

N. Is a pressure measurement device installed [ ] Yes [ ] No Warning alarm? [ ] Yes [ ] No

O. Dirty air is on ..: [ ] Inside of bag [ ] Outside of bag

P. Time between bag cleaning (specify units): ___ sec. [ ] [ ] Timed [ ] Manual

Q. Method of cleaning [ ] Shaking [ ] Reverse air [ ] Pulse Jet [ ] Other: _____

R. Are extra bags readily available? [ ] Yes [ ] No If yes, how many? 5

S. Method of determining when to replace bags: [ ] Alarm [ ] Internal Inspection [ ] Visible emissions [ ] Other: _____

T. How is the collected dust stored, handled, and disposed of? Dust is discharged back into the bin???

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Baghouses/Fabric Filters** **Section L1**

**1. Oxidation System Equipment**

A. Emission Point Designation (Ref. No.): AA-307 (A, B, & C)

B. Equipment Description (include the process(es) that adsorption controls emissions from):

Three (3) Secondary Hammermill Pneumatic Systems A & B (each system equipped with a baghouse filter to control particulate matter emissions; emissions from these sources are routred to the RCO (AA-301).

C. Manufacturer: _____ D. Model: _____

E. Status: [X] Operating [ ] Proposed [ ] Under Construction

**2. Baghouse Data**

A. Cloth Area _____ $ft^2$ B. Air to cloth ratio _____ $acfm/ft^2$

C. Type of bag: [ ] Woven [ ] Felted [ ] Membrane [ ] Other

D. Filter Material _____ E. Max. Filter Operating Temp. _____ $^oF$

F. No. of compartments _____ G. No. of bags per compartment: _____

H. Bag Length _____ ft I. Bag diameter _____ ft

J. Pressure drop: _____ in $H_20$ K. Inlet air flow rate: _____ acfm

L. Air temperature 70 $^oF$ M. Efficiency (PM): 99 %

N. Is a pressure measurement device installed [ ] Yes [ ] No Warning alarm? [ ] Yes [ ] No

O. Dirty air is on ..: [ ] Inside of bag [ ] Outside of bag

P. Time between bag cleaning (specify units): ___ sec. [ ] [ ] Timed [ ] Manual

Q. Method of cleaning [ ] Shaking [ ] Reverse air [ ] Pulse Jet [ ] Other: _____

R. Are extra bags readily available? [ ] Yes [ ] No If yes, how many? 5

S. Method of determining when to replace bags: [ ] Alarm [ ] Internal Inspection [ ] Visible emissions [ ] Other: _____

T. How is the collected dust stored, handled, and disposed of? Dust is discharged back into the bin???

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Baghouses/Fabric Filters** | **Section L1**

**1. Oxidation System Equipment**

A. Emission Point Designation (Ref. No.): AA-308 (A-F)

B. Equipment Description (include the process(es) that adsorption controls emissions from):

Six (6) Pellet Mill / Cooler Pneumatic Systems A-F (each system comprised of t2 pellet mills and one pellet cooler; each system equipped with a baghouse filter to control particulate matter emissions; emissions from these sources are routed to the RCO (AA-301).

C. Manufacturer: _____ D. Model: _____

E. Status: [X] Operating [X] Proposed [ ] Under Construction (2 are proposed)

**2. Baghouse Data**

A. Cloth Area _____ $ft^2$ B. Air to cloth ratio _____ $acfm/ft^2$

C. Type of bag: [ ] Woven [ ] Felted [ ] Membrane [ ] Other

D. Filter Material _____ E. Max. Filter Operating Temp. _____ $^oF$

F. No. of compartments _____ G. No. of bags per compartment: _____

H. Bag Length _____ ft I. Bag diameter _____ ft

J. Pressure drop: _____ in $H_20$ K. Inlet air flow rate: _____ acfm

L. Air temperature 70 $^oF$ M. Efficiency (PM): 99 %

N. Is a pressure measurement device installed [ ] Yes [ ] No Warning alarm? [ ] Yes [ ] No

O. Dirty air is on ..: [ ] Inside of bag [ ] Outside of bag

P. Time between bag cleaning (specify units): ___ sec. [ ] [ ] Timed [ ] Manual

Q. Method of cleaning [ ] Shaking [ ] Reverse air [ ] Pulse Jet [ ] Other: _____

R. Are extra bags readily available? [ ] Yes [ ] No If yes, how many? 5

S. Method of determining when to replace bags: [ ] Alarm [ ] Internal Inspection [ ] Visible emissions [ ] Other: _____

T. How is the collected dust stored, handled, and disposed of? Dust is discharged back into the bin???

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Baghouses/Fabric Filters** | **Section L1**

**1. Oxidation System Equipment**

A. Emission Point Designation (Ref. No.): AA-309

B. Equipment Description (include the process(es) that adsorption controls emissions from):

Starch Storage Silo with bin vent (equipped with baghouse filter)

C. Manufacturer: _____ D. Model: _____

E. Status: [X] Operating [ ] Proposed [ ] Under Construction

**2. Baghouse Data**

A. Cloth Area _____ $ft^2$ B. Air to cloth ratio _____ $acfm/ft^2$

C. Type of bag: [ ] Woven [ ] Felted [ ] Membrane [ ] Other

D. Filter Material _____ E. Max. Filter Operating Temp. _____ $^oF$

F. No. of compartments _____ G. No. of bags per compartment: _____

H. Bag Length _____ ft I. Bag diameter _____ ft

J. Pressure drop: _____ in $H_20$ K. Inlet air flow rate: _____ acfm

L. Air temperature 70 $^oF$ M. Efficiency (PM): 99 %

N. Is a pressure measurement device installed [ ] Yes [ ] No Warning alarm? [ ] Yes [ ] No

O. Dirty air is on ..: [ ] Inside of bag [ ] Outside of bag

P. Time between bag cleaning (specify units): ___ sec. [ ] [ ] Timed [ ] Manual

Q. Method of cleaning [ ] Shaking [ ] Reverse air [ ] Pulse Jet
[ ] Other: _____

R. Are extra bags readily available? [ ] Yes [ ] No If yes, how many? 5

S. Method of determining when to replace bags: [ ] Alarm [ ] Internal Inspection [ ] Visible emissions
[ ] Other: _____

T. How is the collected dust stored, handled, and disposed of? Dust is discharged back into the bin???

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Baghouses/Fabric Filters** | **Section L1**

**1. Oxidation System Equipment**

A. Emission Point Designation (Ref. No.): AA-401

B. Equipment Description (include the process(es) that adsorption controls emissions from):

Two (2) Pellet Storage Silos, Screened Materials Return System, and Pellet Truck Loadout System
(emissions from all sources are controlled by a common baghouse).

C. Manufacturer: _____ D. Model: _____

E. Status: [X] Operating [ ] Proposed [ ] Under Construction

**2. Baghouse Data**

A. Cloth Area _____ $ft^2$ B. Air to cloth ratio _____ $acfm/ft^2$

C. Type of bag: [ ] Woven [ ] Felted [ ] Membrane [ ] Other

D. Filter Material _____ E. Max. Filter Operating Temp. _____ $^oF$

F. No. of compartments _____ G. No. of bags per compartment: _____

H. Bag Length _____ ft I. Bag diameter _____ ft

J. Pressure drop: _____ in $H_20$ K. Inlet air flow rate: _____ acfm

L. Air temperature 70 $^oF$ M. Efficiency (PM): 99 %

N. Is a pressure measurement device installed [ ] Yes [ ] No Warning alarm? [ ] Yes [ ] No

O. Dirty air is on ..: [ ] Inside of bag [ ] Outside of bag

P. Time between bag cleaning (specify units): ___ sec. [ ] [ ] Timed [ ] Manual

Q. Method of cleaning [ ] Shaking [ ] Reverse air [ ] Pulse Jet
[ ] Other: _____

R. Are extra bags readily available? [ ] Yes [ ] No If yes, how many? 5

S. Method of determining when to replace bags: [ ] Alarm [ ] Internal Inspection [ ] Visible emissions
[ ] Other: _____

T. How is the collected dust stored, handled, and disposed of? Dust is discharged back into the bin???

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Oxidation Systems** | **Section L4**

## 1. Oxidation System Equipment

A. Emission Point Designation (Ref. No.): AA-201

B. Equipment Description (include t Finished Pellet Operations

Regenerative Thermal Oxidizer (RTO) controls emissions from chip dryer

C. Manufacturer: MEGTEC D. Model: Clean Switch RTO

E. Status: [X] Operating [ ] Proposed [ ] Under Construction

## 2. Oxidation System Data

A. Type of Oxidation Process:

- [ ] Afterburner
- [ ] Flare
- [ ] Recuperative Thermal Oxidizer
- [ ] Recuperative Catalytic Oxidizer
- [X] Regenerative Thermal Oxidizer
- [ ] Regenerative Catalytic Oxidizer
- [ ] Other: _____

B. Efficiency: 72.5 % (estimated) Controlling the following pollutant(s): CO
Efficiency: 96 % (estimated) Controlling the following pollutant(s): VOC

C. Inlet air flow rate: 200,000 acfm

D. Combustion Chamber Temperature: Minimum: 1450 °F Maximum: 1800 °F

E. Maximum burner rating: 24.0 MMBtu/hr F. Fuel Type: Natural Gas

G. Fuel Usage Rate (specify units): 23,529 scf/hr H. Sulfur in Fuel: 0.02 gr/scf wt %

I. Residence Time: 0.4 seconds J. Percent Excess Air: N/A %

K. Combustion Chamber Volume: 3,637 $ft^3$

L. VOC Concentration: Inlet: 107 ppmv Outlet: 4.3 ppmv

**2. Oxidation System Data (continued)**

M. Catalyst Data (if applicable):

1. Catalyst type: _____

2. Catalyst volume: _____ $ft^3$

3. How is spent catalyst disposed of? _____

N. Flare Data (if applicable):

1. Flare Type: ☐ Non-assisted ☐ Steam-assisted ☐ Air-assisted
   ☐ Other: _____

2. Net heating value of combusted gas: _____ Btu/scf

3. Design exit velocity: _____ ft/sec

4. Is the presence of a flare pilot flame monitored? ☐ Yes ☐ No

   If yes, please describe the monitoring: _____

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Oxidation Systems** **Section L4**

**1. Oxidation System Equipment**

A. Emission Point Designation (Ref. No.): AA-301

B. Equipment Description (include t Finished Pellet Operations

Regenerative Catalytic Oxidizer (RCO) controls emissions from the Primary Hammermills, the Secondary Hammermills, and the Pellet Coolers.

C. Manufacturer: NESTEC Inc. D. 2 Model: 908 RCOs

E. Status: [X] Operating [ ] Proposed [ ] Under Construction

**2. Oxidation System Data**

A. Type of Oxidation Process:

- [ ] Afterburner
- [ ] Flare
- [ ] Recuperative Thermal Oxidizer
- [ ] Recuperative Catalytic Oxidizer
- [ ] Regenerative Thermal Oxidizer
- [X] Regenerative Catalytic Oxidizer
- [ ] Other: _____

B. Efficiency: 96.3 % (estimated) Controlling the following pollutant(s): VOC
Efficiency: _____ % (estimated) Controlling the following pollutant(s): _____

C. Inlet air flow rate: 293,042 acfm

D. Combustion Chamber Temperature: Minimum: 750 °F Maximum: 1400 °F

E. Maximum burner rating: 5.0 MMBtu/hr F. Fuel Type: Natural Gas

G. Fuel Usage Rate (specify units): 3.13 mmBTU/hr H. Sulfur in Fuel: 0.02 gr/scf wt %

I. Residence Time: 1 seconds J. Percent Excess Air: 10 %

K. 2 Combustion Chamber Volume: 9,470 $ft^3$

L. VOC ($CH_4$) Concentration: Inlet: 726 ppmvd Outlet: 26 ppmvd

**2. Oxidation System Data (continued)**

M. Catalyst Data (if applicable):

1. Catalyst type: manganese oxide
2. Catalyst volume: _____ $ft^3$
3. How is spent catalyst disposed of? _____

N. Flare Data (if applicable):

1. Flare Type: ☐ Non-assisted ☐ Steam-assisted ☐ Air-assisted
   ☐ Other: _____
2. Net heating value of combusted gas: _____ Btu/scf
3. Design exit velocity: _____ ft/sec
4. Is the presence of a flare pilot flame monitored? ☐ Yes ☐ No

   If yes, please describe the monitoring: _____

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Electrostatic Precipitators (ESP)** | **Section L6**

**1. Electrostatic Precipitator Description**

A. Emission Point Designation (Ref. No.): AA-201

B. Equipment Description (include t Finished Pellet Operations

Wet ESP (WESP) controls emissions from chip dryer

C. Manufacturer: B & W MEGTEC D. Model: Wet ESP

E. Status: [X] Operating [ ] Proposed [ ] Under Construction

**2. Electrostatic Precipitator Data**

A. Precipitator Type [X] Wet [ ] Dry [ ] Single-stage

[ ] Two-stage [ ] Other:

B. Efficiency: 97.5 % Controlling the following pollutant(s): PM

C. Inlet air flow rate: 171,409 acfm

D. Pressure Drop: 1 in. of $H_2O$

E. Inlet Temperature: 248 °F

F. Total collection plate area: 38,301 $ft^2$

G. Collector Plate Size: Length: 19.5 ft Width: 1 ft (diameter)

H. Gas Viscosity: N/A poise

I. Pollutant Resistivity: N/A ohm-cm

J. Field strength: Charging: 22.4 kV/inch volts Collecting: volts
^3.7 inch voltage gap

K. No. of fields 1 field using 3 transformers/rectifier sets in parallel

L. No. of collector plates per field: 567

**2. Electrostatic Precipitator Data (continued)**

M. Spacing between collector plates 12 in.

N. No. of compartments: 1

O. No. of discharge electrodes 567

P. Corona Power: 210 watts/1000cfm

Q. Electrical Usage: 153 kW/hr

R. Cleaning Method: [ ] Plate Rapping [ ] Plate Vibrating [X] Washing

[ ] Other: _____

S. Rapper Frequency: _____ min/cycle [ ] Automatic [ ] Manual

T. Is flue gas conditioning required? [ ] Yes [X] No

U. Fan location relative to precipitator: [X] Upstream [ ] Downstream

V. How is the collected dust stored, handled, and disposed of?

Spent flush water containing the collected dust flows by gravity into the wet ESP sump. The wastewater is then routed to the furnace system for evaporation.

W. List the electrical conditions per field:

| FIELD NO. | VOLTAGE (kV) | AMPERAGE (mA) |
|---|---|---|
| N/A | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Other Control Device** | **Section L7**

**1. Description**

A. Emission Point Designation (Ref. No.): AA-302

B. Equipment Description (include the process(es) that the equipment controls emissions from):

Primary Hammermill Feed Silo with Bin Vent

C. Manufacturer: _____ D. Model: _____

E. Status: [X] Operating [ ] Proposed [ ] Under Construction

**2. Relevant Data**

A. Efficiency: 99 % Controlling the following pollutant(s): PM

B. Inlet air flow rate: _____ acfm

C. Pressure Drop: _____ in. of $H_2O$

D. Inlet Temperature (Water): _____ °F E. Outlet Temperature (Water): _____ °F

F. How is any generated waste (e.g., dust, wastewater, etc.) collected, stored, handled, and disposed of?

G. Provide any additional details regarding important design and operating parameters below:

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Other Control Device** | **Section L7**

**1. Description**

A. Emission Point Designation (Ref. No.): AA-305

B. Equipment Description (include the process(es) that the equipment controls emissions from):

Secondary Hammermill Silo No. 1 with Bin Vent

C. Manufacturer: _____ D. Model: _____

E. Status: [X] Operating [ ] Proposed [ ] Under Construction

**2. Relevant Data**

A. Efficiency: 99 % Controlling the following pollutant(s): PM

B. Inlet air flow rate: _____ acfm

C. Pressure Drop: _____ in. of $H_2O$

D. Inlet Temperature (Water): _____ °F E. Outlet Temperature (Water): _____ °F

F. How is any generated waste (e.g., dust, wastewater, etc.) collected, stored, handled, and disposed of?

G. Provide any additional details regarding important design and operating parameters below:

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Other Control Device** | **Section L7**

**1. Description**

A. Emission Point Designation (Ref. No.): AA-302

B. Equipment Description (include the process(es) that the equipment controls emissions from):

Secondary Hammermill Silo No. 2 with Bin Vent

C. Manufacturer: _____ D. Model: _____

E. Status: [X] Operating [ ] Proposed [ ] Under Construction

**2. Relevant Data**

A. Efficiency: 99 % Controlling the following pollutant(s): PM

B. Inlet air flow rate: _____ acfm

C. Pressure Drop: _____ in. of $H_2O$

D. Inlet Temperature (Water): _____ °F E. Outlet Temperature (Water): _____ °F

F. How is any generated waste (e.g., dust, wastewater, etc.) collected, stored, handled, and disposed of?

G. Provide any additional details regarding important design and operating parameters below:

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Other Control Device** | **Section L7**

**1. Description**

A. Emission Point Designation (Ref. No.): AA-309

B. Equipment Description (include the process(es) that the equipment controls emissions from):

Starch Silo with bin vent

C. Manufacturer: _____ D. Model: _____

E. Status: [X] Operating [ ] Proposed [ ] Under Construction

**2. Relevant Data**

A. Efficiency: 99 % Controlling the following pollutant(s): PM

B. Inlet air flow rate: _____ acfm

C. Pressure Drop: _____ in. of $H_2O$

D. Inlet Temperature (Water): _____ °F E. Outlet Temperature (Water): _____ °F

F. How is any generated waste (e.g., dust, wastewater, etc.) collected, stored, handled, and disposed of?

G. Provide any additional details regarding important design and operating parameters below:

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Stack Testing** | **Section M6**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-201

B. Emission Point Description: RTO

C. For what emission limit or standard does the monitoring demonstrate compliance?
PM (filterable only), PM10/PM2.5 (filterable + condensable), CO, NOx, VOCs, methanol, acetaldehyde, formaldehyde, acrolein, propionaldehyde, hydrogen chloride (HCl), & phenol

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?
Condition 5.8 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Stack Testing Information**

A. Test method(s) and corresponding pollutants(s):
Applicable EPA-approved test methods in Appendix A of 40 CFR Part 60, Appendix M of 40 CFR Part 51, or Appendix A of 40 CFR Part 63.

B. Testing frequency: [ ] Annual [ ] Biennial [X] Other: Within 25 months of previous test

C. Has EPA approved an alternative method or has the applicant proposed an alternative test method?

[ ] Yes [X] No

If yes, provide details on the alternative method and the date the alternative method was approved (if applicable).

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Stack Testing** — **Section M6**

## 1. Applicable Emission Point Description

A. Emission Point Designation (Ref. No.): AA-301

B. Emission Point Description: RCO

C. For what emission limit or standard does the monitoring demonstrate compliance?
PM (filterable only), PM10/PM2.5 (filterable + condensable), CO, NOx, VOCs, methanol, acetaldehyde, formaldehyde, acrolein, propionaldehyde, hydrogen chloride (HCl), & phenol

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?
Condition 5.8 - Permit to Construct No. 0080-00031 issued March 9, 2021

## 2. Stack Testing Information

A. Test method(s) and corresponding pollutants(s):
Applicable EPA-approved test methods in Appendix A of 40 CFR Part 60, Appendix M of 40 CFR Part 51, or Appendix A of 40 CFR Part 63.

B. Testing frequency: [ ] Annual [ ] Biennial [X] Other: Within 25 months of previous test

C. Has EPA approved an alternative method or has the applicant proposed an alternative test method?

[ ] Yes [X] No

If yes, provide details on the alternative method and the date the alternative method was approved (if applicable).

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Stack Testing** | **Section M6**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-301

B. Emission Point Description: RCO

C. For what emission limit or standard does the monitoring demonstrate compliance?
Perform apparent density testing on RCO catalytic media in grams/m3.

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?
Condition 5.21 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Stack Testing Information**

A. Test method(s) and corresponding pollutants(s):
As required - apparent density testing

B. Testing frequency: [ ] Annual [ ] Biennial [X] Other: Within 16 months of previous test

C. Has EPA approved an alternative method or has the applicant proposed an alternative test method?

[ ] Yes [X] No

If yes, provide details on the alternative method and the date the alternative method was approved (if applicable).

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** | **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-000

B. Emission Point Description: Facility--Wide

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

HAP Emissions (methanol, acetaldehyde, formaldehyde, acrolein, propionaldehyde, hydrogen chloride, phenol)

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Condition 5.3 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| HAP Emissions | US ODT/month & US ODT/year | Monthly & Rolling 12-Month Total | Calculate and record the emissions of each HAP and all HAPs in total on a monthly and on a rolling 12-month total basis. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

ODT = ovendried tons.

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: Monthly & Rolling 12-Month Total

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** | **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-200

B. Emission Point Description: Wood Drying Operations

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Criteria Pollutant Emissions

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?
Condition 5.4 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| PM/PM10/PM2.5, NOx, CO, VOCs | US ODT/month & US ODT/year | Monthly & Rolling 12-Month Total | Calculate and record the emissions of each pollutant on a monthly and on a rolling 12-month total basis. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

ODT = ovendried tons.

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: Monthly & Rolling 12-Month Total

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** | **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-300

B. Emission Point Description: Wood Pellet Operations

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Criteria Pollutant Emissions

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?
Condition 5.4 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| PM/PM10/PM2.5, NOx, CO, VOCs | US ODT/month & US ODT/year | Monthly & Rolling 12-Month Total | Calculate and record the emissions of each pollutant on a monthly and on a rolling 12-month total basis. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

ODT = ovendried tons.

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: Monthly & Rolling 12-Month Total

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** | **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-400

B. Emission Point Description: Finished Pellet Operations

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Criteria Pollutant Emissions

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?
Condition 5.4 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| PM/PM10/PM2.5, NOx, CO, VOCs | US ODT/month & US ODT/year | Monthly & Rolling 12-Month Total | Calculate and record the emissions of each pollutant on a monthly and on a rolling 12-month total basis. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

ODT = ovendried tons.

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: Monthly & Rolling 12-Month Total

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** | **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-500

B. Emission Point Description: Emergency Engines

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Criteria Pollutant Emissions

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?
Condition 5.4 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| PM/PM10/PM2.5, NOx, CO, VOCs | US ODT/month & US ODT/year | Monthly & Rolling 12-Month Total | Calculate and record the emissions of each pollutant on a monthly and on a rolling 12-month total basis. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

ODT = ovendried tons.

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: Monthly & Rolling 12-Month Total

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-201

B. Emission Point Description: RTO

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Combustion chamber temperature

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Condition 5.11 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Combustion chamber temperature | Degrees F | 3-hour block average | Continuously monitor & record the combustion chamber temperature. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: As specified above

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-301

B. Emission Point Description: RCO

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Combustion chamber temperature

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Condition 5.11 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Combustion chamber temperature | Degrees F | 3-hour block average | Continuously monitor & record the combustion chamber temperature. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: As specified above

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-201

B. Emission Point Description: RTO

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Opacity

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Condition 5.12 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Opacity | % | Weekly | Use EPA Test Method 22 on the exhaust weekly. If visible emissions are detected, immediately perfrom and record a visible emission evaluation (VEE) in accordance with EPA Test Method 9. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [X] Weekly [ ] Monthly

[ ] Other:

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-301

B. Emission Point Description: RCO

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Opacity

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Condition 5.12 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Opacity | % | Weekly | Use EPA Test Method 22 on the exhaust weekly. If visible emissions are detected, immediately perfrom and record a visible emission evaluation (VEE) in accordance with EPA Test Method 9. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [X] Weekly [ ] Monthly

[ ] Other:

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-201

B. Emission Point Description: WESP - RTO Control System

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Secondary Voltage

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?
Condition 5.14 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Secondary Voltage | Volts | 3-hour block average | Continuously monitor & record the secondary voltage. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: As required based on the above.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** | **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-203b & AA203c

B. Emission Point Description: Furnace Bypass Stack

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Bypass Hours

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Condition 5.15 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Hours bypass stack is used | Hours | As needed | Monitor & record date, time, & duration of every start-up & shurtdown period that resulting in emissions being diverted to the bypass stack. Also, record the total duration of start-up & shutdown periods in hours/year based on a rolling 12-month total. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: As required based on the above.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-204b

B. Emission Point Description: Wood Chip Rotary Dryer Bypass

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Bypass Hours

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Condition 5.15 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Hours bypass stack is used | Hours | As needed | Monitor & record date, time, & duration of every start-up & shurtdown period that resulting in emissions being diverted to the bypass stack. Also, record the total duration of start-up & shutdown periods in hours/year based on a rolling 12-month total. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: As required based on the above.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-203b

B. Emission Point Description: Furnace Bypass Stack

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Idle mode hours

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Condition 5.16 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Hours bypass stack is used | Hours | As needed | Monitor & record date, time, & duration of every period the furnace operates in idle mode. Also, record the total duration of all idle mode periods in hours/year based on a rolling 12-month total. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: As required based on the above.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-204a

B. Emission Point Description: Wood Chip Rotary Dryer

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Dried wood chips throughput from Wood Chip Rotary Dryer

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Condition 5.17 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Throuhgput of dried wood chips from Chip Dryer | ODT (oven-dried tons) | Monthly & rolling 12-month basis | Monitor & record the throughput of dried wood chips from the dryer on a montly basis & a rolling 12-month total basis |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: As required based on the above.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-300

B. Emission Point Description: Wood Pellet Operations

C. For what emission limit or standard does the recordkeeping demonstrate compliance?
Keep records of weekly inspections for each baghouse & any maintenance performed.

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?
Condition 5.18 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Bahgouse inspections & maintenance | Each occurrence | Weely | Keep records of weekly baghouse inspections and any maintenance performed. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [X] Weekly [ ] Monthly

[ ] Other:

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** | **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-400

B. Emission Point Description: Finished Pellet Operations

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Keep records of weekly inspections for each baghouse & any maintenance performed.

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Condition 5.18 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Bahgouse inspections & maintenance | Each occurrence | Weely | Keep records of weekly baghouse inspections and any maintenance performed. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [X] Weekly [ ] Monthly

[ ] Other:

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-300

B. Emission Point Description: Wood Pellet Operations

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Keep records of baghouse daily differential pressure drop readings.

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Condition 5.19 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Differential pressure drop & maintenance for corrective measures | Inches of water | Daily | Keep records of baghouse daily differential pressure drop readings & any corrective measures to return to the recommended pressure drop (if needed). |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[X] Daily [ ] Weekly [ ] Monthly

[ ] Other:

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-400

B. Emission Point Description: Finished Pellet Operations

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Keep records of baghouse daily differential pressure drop readings.

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Condition 5.19 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Differential pressure drop & maintenance for corrective measures | Inches of water | Daily | Keep records of baghouse daily differential pressure drop readings & any corrective measures to return to the recommended pressure drop (if needed). |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[X] Daily [ ] Weekly [ ] Monthly

[ ] Other:

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-300

B. Emission Point Description: Wood Pellet Operations

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Keep records of total wood pellet production in ODT.

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Condition 5.20 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Wood Pellet Production | ODT (oven-dried tons) | Monthly & Rolling 12-month Total | Keep records of total wood pellet production on a monthly basis & rolling 12-month total basis. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: As included above

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-500

B. Emission Point Description: Emergency Engines (AA-501, AA-502)

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Keep records of hours of operation for each engine and the purpose of the operating hours.

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued……., etc.)?

Condition 5.22 - Permit to Construct No. 0080-00031 issued March 9, 2021

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Hours of operation | Hours | Monthly | Keep records of monthly hours of operation of each engine & the purpose of the operating hours as emergency, maintenance, testing, or other non-emergency use. |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [X] Monthly

[ ] Other:

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-200, AA-300, AA-400, AA-500

B. Emission Point Description: Wood Drying Operations, Wood Pellet Operations, Finished Pellet Operations, Emergency Engines

C. For what emission limit or standard does the recordkeeping demonstrate compliance?
Nitrogen Oxides ≤ 245 tons/year

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?
Permit to Construct issued March 9, 2021; Condition 3.6

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Heat Input | MMBtu/hr | Continuous | Process knowledge and emission calculations |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: Rolling 12-month total

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-000

B. Emission Point Description: Facility

C. For what emission limit or standard does the recordkeeping demonstrate compliance?
Opacity ≤ 40%

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?
Permit to Construct issued March 9, 2021; Conditions 3.1 & 3.2

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Visual Observations | % | Weekly | EPA Method 22 |
| Opacity | % | As needed based on visual observations | EPA Method 9 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [X] Weekly [ ] Monthly

[ ] Other:

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** | **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-000

B. Emission Point Description: Facility Wide

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Particulate Matter – E = 4.1 * p^0.67 where E is the emission rate in lbs/MMBTU and p is the process weight input in tons/hr

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Permit to Construct issued March 9, 2021; Condition 3.3

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Process weight | tons/hr | Continuous | Process knowledge, input records, and emission calculations |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: 3-hour block averages

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-200, AA-300, AA-400, AA-500

B. Emission Point Description: Wood Drying Operations, Wood Pellet Operations, Finished Pellet Operations, Emergency Engines

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

VOC ≤ 245 tons/year

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?
Permit to Construct issued March 9, 2021; Condition 3.6

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Throughput | tons/hr | Continuous | Process knowledge and emission calculations |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: Rolling 12-month total

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-200, AA-300, AA-400, AA-500

B. Emission Point Description: Wood Drying Operations, Wood Pellet Operations, Finished Pellet Operations, Emergency Engines

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

≤ 245 tons/year Particulate Matter (filterable +condensable PM, PM10, PM2.5), filterable PM

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Permit to Construct issued March 9, 2021; Condition 3.6

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Throughput | tons/hr | Continuous | Process knowledge and emission calculations |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: Rolling 12-month total

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-200, AA-300, AA-400, AA-500

B. Emission Point Description: Wood Drying Operations, Wood Pellet Operations, Finished Pellet Operations, Emergency Engines

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

CO ≤ 245 tons/year

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?
Permit to Construct issued March 9, 2021; Condition 3.6

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Carbon Monoxide | tons/hr | Continuous | Process knowledge and emission calculations |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: Rolling 12-month total

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-000

B. Emission Point Description: Facility Wide

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

HAPs < 9.0 tpy (individual), 24.0 tpy (total)

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Permit to Construct issued March 9, 2021; Condition 3.5

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| HAPs | tons/yr | Continuous | Process knowledge and emission calculations |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: 12-month rolling total

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-203b, AA-204b, AA-203c

B. Emission Point Description: Furnace, Dryer

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

Bypass Hours

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?
Permit to Construct issued March 9, 2021; Condition 3.11

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| CO, NOx, PM, PM10, PM2.5, VOC, HAPs | Hours | Monthly | For start-ups & shutdowns, bypass emissions ≤ 50 hours |
| CO, NOx, PM, PM10, PM2.5, VOC, HAPs | Hours | Monthly | While in idle mode, bypass emissions ≤ 500 hours |
| CO, NOx, PM, PM10, PM2.5, VOC, HAPs | Hours | Monthly | Bypass hours during dryer start-ups & shutdowns ≤ 50 hrs/yr |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: Rolling 12-month total

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-501

B. Emission Point Description: 250 HP Diesel Emergency Pump

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

100 hours/year for maintenance and testing

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Permit to Construct issued March 9, 2021 and 40 CFR 60, Subpart IIII

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Operation times and reasons for operation | Hours | Continuous | Non-resettable hour meter |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: Annually (Calendar Year Basis)

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Recordkeeping** **Section M8**

**1. Applicable Emission Point Description**

A. Emission Point Designation (Ref. No.): AA-502

B. Emission Point Description: 402 HP Diesel Emergency Generator

C. For what emission limit or standard does the recordkeeping demonstrate compliance?

500 hours of operation per year, 100 hours for maintenance and testing per year

D. Is there an applicable underlying requirement for the recordkeeping?

[X] Yes [ ] No

If yes, what is that requirement (e.g., NSPS Subpart QQ, Permit to Construct issued…....., etc.)?

Permit to Construct issued March 21, 2021 and 40 CFR 60, Subpart IIII

**2. Recordkeeping Information**

A. Data/information recorded:

| Parameter/Material | Units | Recordkeeping Frequency | Sampling and analysis method (e.g., EPA Method 24) |
|---|---|---|---|
| Operation times and reasons for operation | Hours | Continuous | Non-resettable hour meter |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

B. Compliance is determined:

[ ] Daily [ ] Weekly [ ] Monthly

[X] Other: Annually (Calendar Year Basis)

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

**Applicable Requirements and Status** — **Section N**

**1. Summary of Applicable Requirements**

Provide a list of all applicable federal standards for which your facility is or will be subject to, as well as a list of all Construction Permits establish AA-400 facility. The specific emission standards and limitations applicable to each emission point shall be provided on the following pages (F Finished Pellet Operations

**Federal Regulations:**

| 40 CFR Part | | Subpart | |
|---|---|---|---|
| | 60 | | IIII |
| | 63 | | ZZZZ |

**State Construction Permits[1]:**

| | MM/DD/YY[2] | PSD | PSD Avoidance[3] | Other |
|---|---|---|---|---|
| Permit to Construct issued: | | | | |
| | March 21, 2014 | | X | X |
| | March 9, 2021 | | X | X |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

[1] Any Construction Permit containing requirements that are currently appplicable to the facility should be addressed in this section.

[2] If the permit has been modified, give the most recent modification date.

[3] Because permits are issued on a pollutant-by-pollutant basis, a PSD permit may be significant for one pollutant while also containing PSD avoidance limits for another pollutant. Therefore, you may check multiple boxes for each permit.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Applicable Requirements and Status — Section N

**2. Current Applicable Requirements**

List all applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring used to demonstrate compliance with each applicable requirement. Clearly identify federal regulations from state requirements. Provide the compliance status as of the day the application is signed.

| EMISSION POINT NO. | APPLICABLE REQUIREMENT (Regulatory citation) | POLLUTANT | LIMITS/REQUIREMENTS | TEST METHOD/ COMPLIANCE MONITORING | COMPLIANCE STATUS (In/Out)[1,2] |
|---|---|---|---|---|---|
| AA-000 (Facility) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.1.3 F(1) | Particulate Matter | $E = 4.1\ (p)^{0.67}$ | Process knowledge, fuel records, and emissions calculations | In |
| AA-000 (Facility) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.1.3.A. & B. | Opacity | ≤ 40% opacity | Visual observations, if needed, EPA Method 22 | In |
| AA-000 (Facility) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R..2.2.B(10) (Major Source Avoidance Limits) | HAPs | 9.0 tpy (Individual)<br>24.0 tpy (Total)<br>(Rolling 12-Month Total) | Process knowledge, fuel records, and emissions calculations | In |
| AA-000 (Facility) | 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11) | NA | Maintain all records required for a period of 5 years. | Recordkeeping | In |
| AA-200 (Wood Drying Operations)<br>AA-300 (Wood Pellet Operations)<br>AA-400 (Finished Pellet Operations)<br>AA-500 (Emergency Engines) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(10) (PSD Avoidance Limits) | PM (filterable only) | 245 tpy (Rolling 12-Month Total) | Process knowledge and emissions calculations | In |
| | | $PM_{10}/PM_{2.5}$ (filterable + condensable) | 245 tpy (Rolling 12-Month Total) | | |
| | | $NO_x$ | 245 tpy (Rolling 12-Month Total) | | |
| | | CO | 245 tpy (Rolling 12-Month Total) | | |
| | | VOCs | 245 tpy (Rolling 12-Month Total) | | |

1. Per APC-S-6, Section II.C.8.b(1) for Title V sources, by specifying that the source is in compliance with the applicable requirement(s), I (the applicant) am certifying that I will continue to operate and maintain this source to assure compliance for the duration of the permit term.
2. Per APC-S-6, Section II.C.8.b(3) for Title V sources, by specifying that the source is out of compliance with the applicable requirement(s), I (the applicant) am submitting a schedule, attached herein, which includes a description of the problems and proposed solutions in accordance with APC-S-6, Section II.C.8.c.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Applicable Requirements and Status — Section N

**2. Current Applicable Requirements**

List all applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring used to demonstrate compliance with each applicable requirement. Clearly identify federal regulations from state requirements. Provide the compliance status as of the day the application is signed.

| EMISSION POINT NO. | APPLICABLE REQUIREMENT (Regulatory citation) | POLLUTANT | LIMITS/REQUIREMENTS | TEST METHOD/ COMPLIANCE MONITORING | COMPLIANCE STATUS (In/Out)[1,2] |
|---|---|---|---|---|---|
| AA-201 (WESP/RTO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(10) | PM / $PM_{10}$ / $PM_{2.5,}$ VOCs, HAPs | Always Operate the WESP / RTO When the Wood Chip Rotary Dryer and the Green Hammermills are in Operation | Operating records | In |
| AA-201 (WESP/RTO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(10) | HAPs | Maintian 90% control efficiency for the RTO, measured as VOCs | Performance testing and emissions calculations using emission factor developed from testing. | In |
| AA-203a (165 MMBTU/hr Wood-Fired Furnace) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(10) | Fuel Restriction | Combust only uncontaminated wood waste | Operating records | In |
| AA-204a (Wood Chip Rotary Dryer) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(10) | Dried Wood Chip Throughput | Limit throughput to 578,708 ODT/year on a rolling 12-month total basis | Monthly throughput records and rolling 12-month total throughput calculations | In |
| AA-203b, AA-204b (165 MMBTU/hr Wood Fired Furnace Bypass Stack, 12.5 MMBTU.hr Wood Chip Rotary Dryer Bypass Stack | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(10) | CO, $NO_x$, PM / $PM_{10}$ / $PM_{2.5,}$ VOCs, HAPs | *Start-Up and Shutdown Requirements*: Limit Bypass Emissions for ≤ 100 Hours; *Idle Mode Requirements*: Limit Bypass Emissions for ≤ 500 Hours; (Rolling 12-Month Total Basis) | Operating records and rolling 12-month total bypass hours calculations | In |

1. Per APC-S-6, Section II.C.8.b(1) for Title V sources, by specifying that the source is in compliance with the applicable requirement(s), I (the applicant) am certifying that I will continue to operate and maintain this source to assure compliance for the duration of the permit term.
2. Per APC-S-6, Section II.C.8.b(3) for Title V sources, by specifying that the source is out of compliance with the applicable requirement(s), I (the applicant) am submitting a schedule, attached herein, which includes a description of the problems and proposed solutions in accordance with APC-S-6, Section II.C.8.c.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Applicable Requirements and Status — Section N

**2. Current Applicable Requirements**

List all applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring used to demonstrate compliance with each applicable requirement. Clearly identify federal regulations from state requirements. Provide the compliance status as of the day the application is signed.

| EMISSION POINT NO. | APPLICABLE REQUIREMENT (Regulatory citation) | POLLUTANT | LIMITS/REQUIREMENTS | TEST METHOD/ COMPLIANCE MONITORING | COMPLIANCE STATUS (In/Out)[1,2] |
|---|---|---|---|---|---|
| AA-300 & AA-400 (Wood Pellet Operations & Finished Pellet Operations) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(10) | PM / $PM_{10}$ / $PM_{2.5}$ | Always Operate a Baghouse When a Corresponding Process Unit is in Active Operation | Operating Records | In |
| AA-500 (Emergency Engines AA-501 & 502) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.1.3.D(1)(a) | PM | Limit PM emissions to 0.6 lbs/MMBTU per hour heat input | Emissions calculations | In |
| | Construction Permit Issued on March 9, 2021 and 40 CFR Part 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Combustion Engines (40 CFR 60.*4200(a)(2), Subpart IIII)* | NMHC+NOx, CO, PM(filterable) | Comply with provisions | N/A | In |
| | Construction Permit Issued on March 9, 2021<br>40 CFR 60.4207(b), Subpart IIII<br>40 CFR 80.510(b), Subpart I | Diesel Fuel Requirements | Use diesel fuel with a 15 ppm Maximum Sulfur Content; and 40 Minimum Cetane Index or 35% Maximum Aromatic Content | Fuel Purchase Records | In |
| | Construction Permit Issued on March 9, 2021<br>40 CFR 60.4211(f)(1)-(3), Subpart IIII | Hours of operation | Limit hours of operations to 100 Hours / Calendar Year for Maintenance and Testing and 50 Hours / Calendar Year for Non-Emergency Situations | Operating Records | In |

1 Per APC-S-6, Section II.C.8.b(1) for Title V sources, by specifying that the source is in compliance with the applicable requirement(s), I (the applicant) am certifying that I will continue to operate and maintain this source to assure compliance for the duration of the permit term.

2 Per APC-S-6, Section II.C.8.b(3) for Title V sources, by specifying that the source is out of compliance with the applicable requirement(s), I (the applicant) am submitting a schedule, attached herein, which includes a description of the problems and proposed solutions in accordance with APC-S-6, Section II.C.8.c.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Applicable Requirements and Status — Section N

**2. Current Applicable Requirements**

List all applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring used to demonstrate compliance with each applicable requirement. Clearly identify federal regulations from state requirements. Provide the compliance status as of the day the application is signed.

| EMISSION POINT NO. | APPLICABLE REQUIREMENT (Regulatory citation) | POLLUTANT | LIMITS/REQUIREMENTS | TEST METHOD/ COMPLIANCE MONITORING | COMPLIANCE STATUS (In/Out)[1,2] |
|---|---|---|---|---|---|
| AA-500 (Emergency Engines AA-501 & 502) | Construction Permit Issued on March 9, 2021<br>40 CFR 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines<br>40 CFR 63.6590(c)(1), Subpart ZZZZ | HAPs | Comply with provisions. | N/A | In |
| AA-501(250-hp Diesel Emergency Firewater Pump) | 40 CFR 60.4205(c), 60.4206, and 60.4211(c), Subpart IIII | NMHC+NOx, PM(filterable) | Purchase certified engine. | N/A | In |
| AA-502 (402-hp Diesel Emergency Generator) | 40 CFR 60.4205(b), 60.4202(a)(2), 60.4206, and 60.4211(c), Subpart IIII | NMHC+NOx, CO, PM(filterable) | Purchase certified engine. | N/A | In |
| AA-500 (Emergency Engines AA-501 & 502) | 40 CFR 60.4211(a), Subpart IIII | Work Practice | Comply with the work practices in 40 CFR 60.4211(a). | N/A | In |

1 Per APC-S-6, Section II.C.8.b(1) for Title V sources, by specifying that the source is in compliance with the applicable requirement(s), I (the applicant) am certifying that I will continue to operate and maintain this source to assure compliance for the duration of the permit term.

2 Per APC-S-6, Section II.C.8.b(3) for Title V sources, by specifying that the source is out of compliance with the applicable requirement(s), I (the applicant) am submitting a schedule, attached herein, which includes a description of the problems and proposed solutions in accordance with APC-S-6, Section II.C.8.c.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Applicable Requirements and Status — Section N

**2. Current Applicable Requirements**

List all applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring used to demonstrate compliance with each applicable requirement. Clearly identify federal regulations from state requirements. Provide the compliance status as of the day the application is signed.

| EMISSION POINT NO. | APPLICABLE REQUIREMENT (Regulatory citation) | POLLUTANT | LIMITS/REQUIREMENTS | TEST METHOD/ COMPLIANCE MONITORING | COMPLIANCE STATUS (In/Out)[1,2] |
|---|---|---|---|---|---|
| AA-201 (WESP) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Secondary Voltage (volts) | Install, calibrate, monitor, operate, and inspect continuous monitoring/ recording system for secondary voltage. | Recordkeeping for secondary voltage in volts | In |
| AA-201 (RTO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Temperature (F) | Install, calibrate, monitor, operate, and inspect continuous monitoring/ recording system for combustion chamber temperature. | Recordkeeping for temperature in degrees F | In |
| AA-201 (RTO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | PM/PM10/PM2.5 | Establish the secondary voltage range for the WESP. | Operating records | In |
| AA-201 (RTO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Secondary Voltage (volts) | Continuously monitor and record the secondary voltage (in volts) for the WESP based on a 3-hour block average. | Operating records | In |
| AA-201 (RTO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Opacity | Conduct weekly visible emission observations/evaluations. | Operating records | In |
| AA-204a (Wood Chip Rotary Dryer) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Dried Wood Chip Throughput | Monitor the throughput of wood chips dried on a monthly and rolling 12-month total. | Monthly throughput records and rolling 12-month total throughput calculations | In |
| AA-300 (Wood Pellet Operations), AA-400 (Finished Pellet Operations) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | PM / $PM_{10}$ / $PM_{2.5}$ | Conduct an inspection on each baghouse weekly. | Inspection records | In |

1. Per APC-S-6, Section II.C.8.b(1) for Title V sources, by specifying that the source is in compliance with the applicable requirement(s), I (the applicant) am certifying that I will continue to operate and maintain this source to assure compliance for the duration of the permit term.
2. Per APC-S-6, Section II.C.8.b(3) for Title V sources, by specifying that the source is out of compliance with the applicable requirement(s), I (the applicant) am submitting a schedule, attached herein, which includes a description of the problems and proposed solutions in accordance with APC-S-6, Section II.C.8.c.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Applicable Requirements and Status — Section N

### 2. Current Applicable Requirements

List all applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring used to demonstrate compliance with each applicable requirement. Clearly identify federal regulations from state requirements. Provide the compliance status as of the day the application is signed.

| EMISSION POINT NO. | APPLICABLE REQUIREMENT (Regulatory citation) | POLLUTANT | LIMITS/REQUIREMENTS | TEST METHOD/ COMPLIANCE MONITORING | COMPLIANCE STATUS (In/Out)[1,2] |
|---|---|---|---|---|---|
| AA-300 (Wood Pellet Operations), AA-400 (Finished Pellet Operations) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Opacity | Monitor and record the differential pressure drop across each baghouse daily (in inches of water). | Operating records | In |
| AA-000 (Facility) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Report | Submit a Semi-Annual Monitoring Report by January 31 & July 31 for the preceding 6-month period. | Submittal of Semi-Annual Monitoring Report | In |
| AA-500 (Emergency Engines AA-501 & 502) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Report | Submit Annual Monitoring Report on hours of operation and inlcude with Semi-Annual Monitoring Report. | Submittal of Annual Monitoring Report | In |
| AA-000 (Facility) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.1.3 F(1) | PM / $PM_{10}$ / $PM_{2.5}$ | Develop & implement a Dust Management Plan | Compliance with plan | In |

1 Per APC-S-6, Section II.C.8.b(1) for Title V sources, by specifying that the source is in compliance with the applicable requirement(s), I (the applicant) am certifying that I will continue to operate and maintain this source to assure compliance for the duration of the permit term.

2 Per APC-S-6, Section II.C.8.b(3) for Title V sources, by specifying that the source is out of compliance with the applicable requirement(s), I (the applicant) am submitting a schedule, attached herein, which includes a description of the problems and proposed solutions in accordance with APC-S-6, Section II.C.8.c.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Applicable Requirements and Status — Section N

**2. Future Applicable Requirements**

List all applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring used to demonstrate compliance with each applicable requirement. Clearly identify federal regulations from state requirements. Provide the compliance status as of the day the application is signed.

| EMISSION POINT NO. | FUTURE APPLICABLE REQUIREMENT (Regulatory citation) | POLLUTANT | LIMITS/REQUIREMENTS | TEST METHOD/ COMPLIANCE MONITORING | COMPLIANCE DATE[1] |
|---|---|---|---|---|---|
| AA-300 (Wood Pellet Operations) | Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(10) | Wood Pellet Production | Limit wood pellet production to 624,700 US ODT/year on a rolling 12-month total basis | Monthly production records and rolling 12-month total production calculations | In |
| AA-301 (RCO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(10) | VOCs, HAPs | Always Operate the RCO When the Primary Hammermills, the Dry Shavings Hammermills, Pellet Mills / Pellet Coolers are in Operation | Operating Records | In |
| AA-301 (RCO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(10) | HAPs | Maintain 95% control efficiency, measured as VOCs | Performance testing and emissions calculations using emission factor developed from testing. | In |
| AA-000 (Facility) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.1.3 F(1) | HAPs | Calculate emissions on a monthly and rolling 12-month total. Comply with limits of 9.0 tpy (individual HAP) and 24.0 tpy (total HAPs). | Emissions calculations | In |
| AA-200 (Wood Drying Operations)<br>AA-300 (Wood Pellet Operations)<br>AA-400 (Finished Pellet Operations)<br>AA-500 (Emergency Engines) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | CO, $NO_x$, PM / $PM_{10}$ / $PM_{2.5}$, VOCs | Calculate emissions on a monthly and rolling 12-month total. Comply with the limit of 245 tpy for each pollutant. | Emissions calculations | In |

1 Per APC-S-6, Section II.C.8.b(1) for Title V sources, by specifying that the source is in compliance with the applicable requirement(s), I (the applicant) am certifying that I will continue to operate and maintain this source to assure compliance for the duration of the permit term.

2 Per APC-S-6, Section II.C.8.b(3) for Title V sources, by specifying that the source is out of compliance with the applicable requirement(s), I (the applicant) am submitting a schedule, attached herein, which includes a description of the problems and proposed solutions in accordance with APC-S-6, Section II.C.8.c.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT | | | |
|---|---|---|---|---|---|
| **Applicable Requirements and Status** | | | | | **Section N** |

**2. Future Applicable Requirements**

List all applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring used to demonstrate compliance with each applicable requirement. Clearly identify federal regulations from state requirements. Provide the compliance status as of the day the application is signed.

| EMISSION POINT NO. | FUTURE APPLICABLE REQUIREMENT (Regulatory citation) | POLLUTANT | LIMITS/REQUIREMENTS | TEST METHOD/ COMPLIANCE MONITORING | COMPLIANCE DATE[1] |
|---|---|---|---|---|---|
| AA-301 (RCO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Temperature (F) | Install, calibrate, monitor, operate, and inspect continuous monitoring/ recording system for combustion chamber temperature. | Recordkeeping for temperature in degrees F | In |
| AA-201 (RTO); AA-301 (RCO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(10) | PM (filterable only), PM10/PM2.5 (filterable + condensable), CO, HAPs, $NO_x$, VOCs | Conduct initial performance testing using EPA-approved methods while the average wood chip throughput and/or the average wood pellet production is at no less than ninety percent (90%) of the maximum permitted equipment production capacity (in oven-dried tons per hour). | Initial Performance Testing | In |
| AA-201 (RTO); AA-301 (RCO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(10) | PM (filterable only), PM10/PM2.5 (filterable + condensable), CO, HAPs, $NO_x$, VOCs | Conduct subsequent performance testing using EPA-approved methods no later than twenty-five (25) months after the previously completed performance test while the average wood chip throughput and/or the average wood pellet production is at no less than ninety percent (90%) of the maximum permitted equipment production capacity (in oven-dried tons per hour). | Subsequent Performance Testing | No later than 25 months after the previous performance test |

1 Per APC-S-6, Section II.C.8.b(1) for Title V sources, by specifying that the source is in compliance with the applicable requirement(s), I (the applicant) am certifying that I will continue to operate and maintain this source to assure compliance for the duration of the permit term.

2 Per APC-S-6, Section II.C.8.b(3) for Title V sources, by specifying that the source is out of compliance with the applicable requirement(s), I (the applicant) am submitting a schedule, attached herein, which includes a description of the problems and proposed solutions in accordance with APC-S-6, Section II.C.8.c.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT | | | |
|---|---|---|---|---|---|
| **Applicable Requirements and Status** | | | | | **Section N** |
| **2. Future Applicable Requirements** | | | | | |
| List all applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring used to demonstrate compliance with each applicable requirement. Clearly identify federal regulations from state requirements. Provide the compliance status as of the day the application is signed. | | | | | |
| EMISSION POINT NO. | FUTURE APPLICABLE REQUIREMENT (Regulatory citation) | POLLUTANT | LIMITS/REQUIREMENTS | TEST METHOD/ COMPLIANCE MONITORING | COMPLIANCE DATE[1] |
| AA-300 (Wood Pellet Operations) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Wood Pellet Production | Monitor and record the total production of wood pellets in ODT both on a monthly basis and a rolling 12-month total basis. | Production records | In |
| AA-301 (RCO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | VOCs, HAPs | Monitor the effective life of the catalytic media in the RCO by determining the apparent density (in grams per cubic centimeter) and percent saturation no later than 16 months after the initial start-up. Thereafter, perform subsequent apparent density testing no later than 16 months after the previously completed test. | Test results | Within 16 months of start-up of RCO and every 16 months thereafter |
| AA-201 (RTO); AA-301 (RCO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | PM / PM10 / PM2.5, CO, HAPs, $NO_x$, VOCs | Submit site-specific emission factors for review and approval. | Submittal of emission factors | In |

1 Per APC-S-6, Section II.C.8.b(1) for Title V sources, by specifying that the source is in compliance with the applicable requirement(s), I (the applicant) am certifying that I will continue to operate and maintain this source to assure compliance for the duration of the permit term.

2 Per APC-S-6, Section II.C.8.b(3) for Title V sources, by specifying that the source is out of compliance with the applicable requirement(s), I (the applicant) am submitting a schedule, attached herein, which includes a description of the problems and proposed solutions in accordance with APC-S-6, Section II.C.8.c.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

## Applicable Requirements and Status — Section N

**2. Future Applicable Requirements**

List all applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring used to demonstrate compliance with each applicable requirement. Clearly identify federal regulations from state requirements. Provide the compliance status as of the day the application is signed.

| EMISSION POINT NO. | FUTURE APPLICABLE REQUIREMENT (Regulatory citation) | POLLUTANT | LIMITS/REQUIREMENTS | TEST METHOD/ COMPLIANCE MONITORING | COMPLIANCE DATE[1] |
|---|---|---|---|---|---|
| AA-301 (RCO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Test Results | Submit the Apparent Density Testing Results no later than 30 days after testing. | Test results | No later than 30 days after testing is complete |
| AA-204a (Wood Chip Rotary Dryer) | 11 Miss. Admin. Code Pt. 2, R.2.2.B(10) | DriedWood Chip Throughput | Limit throughput to 660,000 US ODT/year on a rolling 12-month total basis | Monthly production records and rolling 12-month total production calculations | In |
| AA-203b (165 MMBTU/hr Wood Fired Furnace Bypass Stack) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Hours of Duration | Monitor and record the date, time, and duration of every period that the furnace operates in idle mode. Additionally, calculate and record the total duration of all idle mode periods for the furnace in hours per year based on a rolling 12-month total. During any period that the furnace operates in idle mode, monitor the volume of wood waste fed into the furnace and calculate the hourly heat input rate based on a 3-hour block average. | Operating Records | In |

1 Per APC-S-6, Section II.C.8.b(1) for Title V sources, by specifying that the source is in compliance with the applicable requirement(s), I (the applicant) am certifying that I will continue to operate and maintain this source to assure compliance for the duration of the permit term.

2 Per APC-S-6, Section II.C.8.b(3) for Title V sources, by specifying that the source is out of compliance with the applicable requirement(s), I (the applicant) am submitting a schedule, attached herein, which includes a description of the problems and proposed solutions in accordance with APC-S-6, Section II.C.8.c.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT | | | |
|---|---|---|---|---|---|
| **Applicable Requirements and Status** | | | | | **Section N** |
| **2. Future Applicable Requirements** | | | | | |
| List all applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring used to demonstrate compliance with each applicable requirement. Clearly identify federal regulations from state requirements. Provide the compliance status as of the day the application is signed. | | | | | |
| EMISSION POINT NO. | FUTURE APPLICABLE REQUIREMENT (Regulatory citation) | POLLUTANT | LIMITS/REQUIREMENTS | TEST METHOD/ COMPLIANCE MONITORING | COMPLIANCE DATE[1] |
| AA-203b (165 MMBTU/hr Wood Fired Furnace Bypass Stack) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Hours of Duration | Monitor and record the date, time, and duration of every period that the furnace operates in idle mode. Additionally, calculate and record the total duration of all idle mode periods for the furnace in hours per year based on a rolling 12-month total. During any period that the furnace operates in idle mode, monitor the volume of wood waste fed into the furnace and calculate the hourly heat input rate based on a 3-hour block average. | Operating Records | In |
| AA-203b, AA-204b (165 MMBTU/hr Wood Fired Furnace Bypass Stack, 12.5 MMBTU.hr Wood Chip Rotary Dryer Bypass Stack) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Hours of Duration | Monitor and record the date, time, and duration of every start-up and shutdown period experienced by the furnace and/or the dryer that resulted in emissions being diverted to the corresponding bypass stacks. Additionally, record the total respective duration of start-up and shutdown periods for the furnace and the dryer in hours per year based on a rolling 12-month total. | Operating Records | In |
| AA-201 (RTO); AA-301 (RCO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Test Results | Submit Performance Test Results no later than 60 days after completion of the test. | Submittal of test results | In |
| 1 Per APC-S-6, Section II.C.8.b(1) for Title V sources, by specifying that the source is in compliance with the applicable requirement(s), I (the applicant) am certifying that I will continue to operate and maintain this source to assure compliance for the duration of the permit term.<br>2 Per APC-S-6, Section II.C.8.b(3) for Title V sources, by specifying that the source is out of compliance with the applicable requirement(s), I (the applicant) am submitting a schedule, attached herein, which includes a description of the problems and proposed solutions in accordance with APC-S-6, Section II.C.8.c. | | | | | |

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT | | | |
|---|---|---|---|---|---|
| **Applicable Requirements and Status** | | | | | **Section N** |
| **2. Future Applicable Requirements** | | | | | |
| List all applicable state and federal requirements, including emission limits, operating restrictions, etc., and the applicable test methods or monitoring used to demonstrate compliance with each applicable requirement. Clearly identify federal regulations from state requirements. Provide the compliance status as of the day the application is signed. | | | | | |
| EMISSION POINT NO. | FUTURE APPLICABLE REQUIREMENT (Regulatory citation) | POLLUTANT | LIMITS/REQUIREMENTS | TEST METHOD/ COMPLIANCE MONITORING | COMPLIANCE DATE[1] |
| AA-201 (RTO); AA-301 (RCO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | PM / PM10 / PM2.5, CO, HAPs, $NO_x$, VOCs | Establish site-specific emission factors for PM, PM10, PM2.5, NOX, CO, VOCs, methanol, acetaldehyde, formaldehyde, acrolein, propionaldehyde, hydrogen chloride (HCl), and phenol in pounds per oven-dried tons using both the test results and applicable throughput data collected during the initial performance testing event. | Emission factors calculated using initial performance test data and throughput data | Following initial performance test |
| AA-201 (RTO); AA-301 (RCO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Combustion Chamber Temperature | Continuously monitor and record the combustion chamber temperature (in degrees Fahrenheit) based on a 3-hour block average. | Operating Records | In |
| AA-201 (RTO); AA-301 (RCO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Protocol, 10-day Notification | Submit Performance Tesing Protocol within 30 days of performing testing and 10-day Notification of Performance Testing. | Submittal of protocol & 10-day notification | Prior to subsequent performance tests |
| AA-201 (RTO); AA-301 (RCO) | Construction Permit Issued on March 9, 2021 and 11 Miss. Admin. Code Pt. 2, R.2.2.B(11) | Opacity | Perform and record a weekly visible emission observation in accordance with EPA Test Method 22 on the exhaust of each control system during daylight hours and during representative operating conditions. | Operating Records | In |

1 Per APC-S-6, Section II.C.8.b(1) for Title V sources, by specifying that the source is in compliance with the applicable requirement(s), I (the applicant) am certifying that I will continue to operate and maintain this source to assure compliance for the duration of the permit term.

2 Per APC-S-6, Section II.C.8.b(3) for Title V sources, by specifying that the source is out of compliance with the applicable requirement(s), I (the applicant) am submitting a schedule, attached herein, which includes a description of the problems and proposed solutions in accordance with APC-S-6, Section II.C.8.c.

| FORM 5 | MDEQ | MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY APPLICATION FOR AIR POLLUTION CONTROL PERMIT |
|---|---|---|

# Insignificant Activities *(for Title V facilities only)*

## 1 List of Insignificant Activities

List all insignificant activities identified in 11 Miss. Admin. Code Pt. 2, R. 6.7., with the exception of those in 11 Miss. Admin. Code Pt. 2, R.6.7.A.

1. Road dust from truck traffic on paved roads
2. Ultra low sulfur diesel (ULSD) tank - 10,000 gallon rated capacity
3. Bark and wood residues conveyors
4. Bark and wood residues hog

## 2 Emissions Information

List the total emissions for each regulated pollutant from the combined insignificant activities listed above in accordance with the Permit Application Instructions *(calculations not needed unless requested by DEQ)* .

| POLLUTANT | POTENTIAL TO EMIT | |
|---|---|---|
| | lb/hr | tons/yr |
| PM | 2.6 | 11.5 |
| $PM_{10}$ | 0.5 | 2.1 |
| $PM_{2.5}$ | 0.12 | 0.5 |
| VOC | 0.0007 | 0.003 |
| | | |
| | | |

# APPENDIX B: EMISSIONS CALCULATIONS

| Emission Point | Description | Potential-to-Emit Summary (After Adding RCO) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $PM_{2.5}$ (tpy) | $PM_{10}$ (tpy) | $SO_2$ (tpy) | $NO_x$ (tpy) | CO (tpy) | VOC (tpy) | $CO_2e$ (tpy) | Methanol (tpy) | Formadehyde (tpy) | Acetaldehyde (tpy) | Acrolein (tpy) | Phenol (tpy) | Propionaldehyde (tpy) | HCl (tpy) | Total HAPs (tpy) |
| AA-102 | Log Chipper | 0.01 | 0.05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| AA-101 | Log Debarker | 0.02 | 0.09 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| AA-201 | WESP, RTO, Burner, Dryer Furnace | 16.12 | 16.12 | 50.70 | 90.29 | 189.36 | 45.14 | 12,312 | 6.92 | 3.86 | 1.54 | 0.65 | 2.991 | 0.444 | 0.49 | 17.52 |
| AA-203b | Furnace SUSD Bypass Stack | | | | | 0.50 | 0.01 | | | 0.004 | 0.001 | 0.003 | 4.21E-05 | 5.03E-05 | 0.02 | 0.03 |
| AA-203c | Furnace Idling Bypass Stack | | | | | 2.48 | 0.07 | | | 0.02 | 0.003 | 0.02 | 2.10E-04 | 2.52E-04 | 0.08 | 0.16 |
| AA-204b | Dryer SUSD Bypass Stack | 1.27 | 1.27 | 0.09 | 1.56 | 2.02 | 2.72 | | | 0.08 | 0.04 | 0.01 | 0.016 | 0.008 | -- | 0.24 |
| AA-302 | Primary Hammermill Feed Silo with bin vent | 0.84 | 0.84 | -- | -- | -- | 6.50 | -- | 0.33 | 0.62 | 0.33 | -- | -- | -- | -- | 1.27 |
| AA-305 | Secondary Hammermill Silo 1 with bin vent | 0.84 | 0.84 | -- | -- | -- | 5.79 | -- | 0.30 | 0.55 | 0.30 | -- | -- | -- | -- | 1.14 |
| AA-306 | Secondary Hammermill Silo 2 with bin vent | 0.84 | 0.84 | -- | -- | -- | 3.23 | -- | 0.15 | 0.28 | 0.15 | -- | -- | -- | -- | 0.57 |
| AA-301 | RCO, Burner | 4.12 | 6.65 | 0.03 | 4.06 | 53.97 | 37.58 | 7,182 | 12.81 | 1.09 | 1.16 | 0.44 | 6.93 | 1.06 | -- | 15.55 |
| AA-309 | Starch Silo | 0.0002 | 0.0002 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| AA-401A | Pellet Storage Silo No. 1 with bin vent | 0.17 | 0.17 | -- | -- | -- | 4.36 | -- | 0.22 | 0.41 | 0.22 | -- | -- | -- | -- | 0.86 |
| AA-401B | Pellet Storage Silo No. 2 with bin vent | 0.17 | 0.17 | -- | -- | -- | 4.36 | -- | 0.22 | 0.41 | 0.22 | -- | -- | -- | -- | 0.86 |
| AA-401C | Screened Materials Return System | 4.20 | 4.20 | -- | -- | -- | 0.87 | -- | 0.04 | 0.08 | 0.04 | -- | -- | -- | -- | 0.17 |
| AA-401D | Pellet Truck Loadout System | 0.55 | 0.74 | -- | -- | -- | 9.67 | -- | 0.43 | 0.83 | 0.43 | -- | -- | -- | -- | 1.69 |
| AA-304 | Truck Dump | 0.01 | 0.038 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Paved Roads (Fugitives) | 0.71 | 2.87 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| AA-501 | 250 hp Diesel Fire Pump Engine | 0.004 | 0.004 | 0.03 | 0.08 | 0.08 | 0.08 | 15.00 | -- | 0.0001 | 0.0001 | 8.09E-06 | -- | -- | -- | 0.0003 |
| AA-502 | 402 hp Emergency Diesel Generator | 0.01 | 0.01 | 0.04 | 0.13 | 0.12 | 0.13 | 24.00 | -- | 0.0002 | 0.0001 | 1.30E-05 | -- | -- | -- | 0.0006 |
| | **Total Emissions** | **29.86** | **34.78** | **50.89** | **96.12** | **248.52** | **120.53** | **19,533.00** | **21.41** | **8.24** | **4.43** | **1.12** | **9.941** | **1.514** | **0.58** | **40.07** |

**Notes:**

Emissions from the RCO burner, 6 primary hammermills, 3 secondary hammermills, and 6 pellet coolers are routed to the RCO emission point included above.

Bypas stack scenarios (AA-203b, AA-203c, and AA-204b) have been included for startup and shutdown scenarios for the biomass furnace and rotary dryer, as well as idling for the biomass furnace.

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Log Debarker | DBK | AA-101 |

## Debarker Emission Factors

| Emission Factor (lb/ton of logs debarked) | | |
|---|---|---|
| **PM** [1] | **$PM_{10}$** [2] | **$PM_{2.5}$** [3] |
| 0.00018 | 8.25E-05 | 1.98E-05 |

[1] Per manufacturer's guarantee dated February 12, 2013 at a sister facility.

[2] The emission factor for $PM_{10}$ is determined based on the ratio of the $PM_{10}$ to PM emissions from TCEQ *Draft Wood Industry Emission Factors* guidance document, dated May 9, 2005.

[3] The emission factor for $PM_{2.5}$ is determined based on the ratio of the $PM_{2.5}$ to PM emissions from the chipper. The $PM_{10}$ and $PM_{2.5}$ emissions from the chipper were provided from the manufacturer and is representative of emissions at a similar facility.

## Debarker Emissions

| Emission Point ID No. | Description | Process Rate [1] (metric tons/hr) | Hours of Operation [2] (hrs/yr) | PTE (lb/hr) | | | Annual Emissions [4] (tpy) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | PM | $PM_{10}$ | $PM_{2.5}$ | PM | $PM_{10}$ | $PM_{2.5}$ |
| AA-101 | Debarking Operations | 220 | 8,760 | 0.044 | 0.02 | 4.80E-03 | 0.19 | 0.09 | 0.02 |

[1] Based on maximum design rate at a similar facility.

2 Assuming continuous operations.

[3] PTE Emissions (lb/hr) = Process Rate (metric tons/hr) * 1.102 (tons/metric ton) * Emission Factor (lb/ton of logs debarked)

$$\text{Hourly PM Emissions (lb/hr)} = \frac{220 \text{ metric tons}}{\text{hr}} \times \frac{1.102 \text{ tons}}{\text{metric ton}} \times \frac{0.00018 \text{ lb}}{\text{tons of logs debarked}} = 0.04 \text{ lb/hr}$$

[4] Annual Emissions (tpy) = Hourly Emissions (lb/hr) * Hours of Operation (hrs/yr) * 1 ton / 2,000 lb

$$\text{Annual PM Emissions (tpy)} = \frac{0.04 \text{ lb}}{\text{hr}} \times \frac{8{,}760 \text{ hrs}}{\text{yr}} \times \frac{1 \text{ ton}}{2{,}000 \text{ lb}} = 0.19 \text{ tpy}$$

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Log Chipper | CHIP | AA-102 |

| | | |
|---|---|---|
| Hours of Operation [1] | 8,760 | hrs/yr |
| Partial Enclosure Control Factor [2] | 95 | % |

[1] Based on a similar facility located in Woodville, Texas and Urania, Louisiana.

[2] Assumed control factor for partial enclosure of source.

**Chipper Emissions**

| Emission Point ID No. | Description | Pollutant | PTE (lb/hr) Uncontrolled [1] | PTE (lb/hr) Controlled [2] | Annual Emissions [3] (tpy) Uncontrolled | Annual Emissions [3] (tpy) Controlled |
|---|---|---|---|---|---|---|
| AA-102 | Chipper | PM | 0.75 | 0.04 | 3.29 | 0.16 |
| | | $PM_{10}$ | 0.25 | 0.01 | 1.10 | 0.05 |
| | | $PM_{2.5}$ | 0.06 | 3.00E-03 | 0.26 | 0.01 |

[1] Per manufacturer's guarantee dated July 8, 2011.

[2] Hourly Controlled Emissions (lb/hr) = Hourly Uncontrolled Emissions (lb/hr) * (1 - (Partial Enclosure Control Factor (%) / 100))

$$\text{PM Controlled Hourly Emissions (lb/hr)} = \frac{0.75 \text{ lb}}{\text{hr}} \times (1 - (95\% / 100)) = 0.04 \text{ lb/hr}$$

[3] Annual Emissions (tpy) = Hourly Emissions (lb/hr) * Hours of Operation (hrs/yr) * 1 ton / 2,000 lb

$$\text{PM Uncontrolled Annual Emissions (tpy)} = \frac{0.75 \text{ lb}}{\text{hr}} \times \frac{8{,}760 \text{ hrs}}{\text{yr}} \times \frac{1 \text{ ton}}{2{,}000 \text{ lb}} = 3.29 \text{ tpy}$$

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Chip Dryer/Biomass Furnace System | RTO | AA-201 |

The RTO stack exhausts controlled process VOC and PM emissions from the chip dryer as well as controlled combustion emissions from the biomass furnace. PM emissions are controlled with a wet electrostatic precipitator (WESP). VOC emissions from these sources are controlled by the RTO. Combustion emissions from the RTO's gas burner also exhaust out of the stack.

| Operating Data | |
|---|---|
| Dryer Capacity[1] | 467,316 ODT*/yr |
| Operating hours[1] | 8,760 hrs/yr |

*ODT = oven dried ton (U.S.) of chips

| *Emission Totals:* | | | | |
|---|---|---|---|---|
| Pollutant | Emission Factor | Reference | Emission Rates PTE (lb/hr) | Emission Rates Annual (tons/yr) |
| *Criteria Pollutants* | | | | |
| $PM_{2.5}$ | 0.0690 lb/ODT | See Note 7 | 3.68 | 16.12 |
| PM | 0.0690 lb/ODT | See Note 7 | 3.68 | 16.12 |
| SO | 0.2170 lb/ODT | See Note 3 | 11.58 | 50.70 |
| NOx | 0.3864 lb/ODT | See Note 7 | 20.61 | 90.29 |
| CO | 0.8104 lb/ODT | See Note 7 | 43.23 | 189.36 |
| VOC Total | 0.1932 lb/ODT | See Note 7 | 10.31 | 45.14 |
| *Hazardous/Toxic Air Pollutants* | | | | |
| Acetaldehyde | 0.0066 lb/ODT | See Note 7 | 0.352 | 1.542 |
| Acrolein | 0.0028 lb/ODT | See Note 7 | 0.149 | 0.654 |
| Benzene | 0.0009 lb/ODT | See Note 2 | 0.049 | 0.215 |
| Carbon tetrachloride | 0.0000 lb/ODT | See Note 2 | 0.001 | 0.002 |
| Chlorine | 0.0002 lb/ODT | See Note 2 | 0.009 | 0.040 |
| Chlorobenzene | 0.0000 lb/ODT | See Note 2 | 0.0004 | 0.002 |
| Chloroform | 0.0000 lb/ODT | See Note 2 | 0.0003 | 0.001 |
| Chloromethane | 0.0000 lb/ODT | See Note 2 | 0.0003 | 0.001 |
| 1,2-Dibromoethane | 0.0000 lb/ODT | See Note 2 | 0.001 | 0.003 |
| 1,2-Dichloroethane | 0.0000 lb/ODT | See Note 2 | 0.0003 | 0.001 |
| Dichloromethane | 0.0001 lb/ODT | See Note 2 | 0.003 | 0.015 |
| 1,2-Dichloropropane | 0.0000 lb/ODT | See Note 2 | 0.0004 | 0.002 |
| Ethyl benzene | 0.0000 lb/ODT | See Note 2 | 0.0004 | 0.002 |
| Formaldehyde | 0.0165 lb/ODT | See Note 7 | 0.880 | 3.855 |
| n-Hexane | 0.001 lb/ODT | See Note 2 | 0.0300 | 0.131 |
| Hydrochloric acid | 0.0021 lb/ODT | | 0.112 | 0.491 |
| Mercury (and compounds) | 7.67E-06 lb/ODT | See Note 2 | 0.0004 | 0.002 |
| Methanol | 0.0296 lb/ODT | See Note 7 | 1.579 | 6.916 |
| Naphthalene (and Methylnaphthalenes) | 2.12E-05 lb/ODT | See Note 2 | 0.001 | 0.005 |
| Phenol | 0.0128 lb/ODT | See Note 7 | 0.683 | 2.991 |
| Polynuclear Aromatic Hydrocarbons | 6.12E-06 lb/ODT | See Note 2 | 0.0003 | 0.001 |
| Proprionaldehyde | 0.0019 lb/ODT | See Note 7 | 0.101 | 0.444 |
| Styrene | 4.16E-04 lb/ODT | See Note 2 | 0.0222 | 0.097 |
| Tetrachloroethylene | 8.32E-06 lb/ODT | See Note 2 | 0.0004 | 0.002 |
| Toluene | 2.01E-04 lb/ODT | See Note 2 | 0.0107 | 0.047 |
| 1,1,1-Trichloroethane | 6.79E-06 lb/ODT | See Note 2 | 0.0004 | 0.002 |
| Trichloroethylene | 6.57E-06 lb/ODT | See Note 2 | 0.0004 | 0.002 |
| Trichlorofluoromethane | 8.98E-05 lb/ODT | See Note 2 | 0.0048 | 0.021 |
| Xylene | 5.48E-06 lb/ODT | See Note 2 | 0.0003 | 0.001 |

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Chip Dryer/Biomass Furnace System | RTO | AA-201 |

The RTO stack exhausts controlled process VOC and PM emissions from the chip dryer as well as controlled combustion emissions from the biomass furnace. PM emissions are controlled with a wet electrostatic precipitator (WESP). VOC emissions from these sources are controlled by the RTO. Combustion emissions from the RTO's gas burner also exhaust out of the stack.

| Operating Data | |
|---|---|
| Dryer Capacity[1] | 467,316 ODT*/yr |
| Operating hours[1] | 8,760 hrs/yr |

*ODT = oven dried ton (U.S.) of chips

| *Hazardous/Toxic Air Pollutants* | | | | |
|---|---|---|---|---|
| Arsenic (and compounds) | 1.20E-06 lb/ODT | See Note 2 | 0.0001 | 0.0003 |
| Barium (and compounds) | 9.31E-06 lb/ODT | See Note 2 | 0.0005 | 0.0022 |
| Copper (and compounds) | 2.68E-06 lb/ODT | See Note 2 | 0.0001 | 0.0006 |
| Lead Compounds | 2.63E-06 lb/ODT | See Note 2 | 0.0001 | 0.0006 |
| Manganese (and compounds) | 8.76E-05 lb/ODT | See Note 2 | 0.0047 | 0.0205 |
| Nickel (and compounds) | 1.81E-06 lb/ODT | See Note 2 | 0.0001 | 0.0004 |
| Phosphorus | 1.48E-06 lb/ODT | See Note 2 | 0.0001 | 0.0003 |
| Zinc (and compounds) | 2.30E-05 lb/ODT | See Note 2 | 0.0012 | 0.0054 |
| | | **Total HAP Emissions** | **4.00** | **17.52** |
| *Greenhouse Gas Emissions* | | | | |
| $CO_2e$ | - | See Note 2 | - | 12,312 |

REFERENCE/NOTES

1. Based on production information provided Josh Jones (Drax Biomass) to Sharon Killian (Trinity) via email.

2. Emissions are the sum from the following individual components: Biomass furnace combustion of wood product and RTO burner combustion of natural gas. Calculation of individual components are attached. Note that biogenic emissions have not been included.

3. $SO_2$ emission rates are based on the results of February 2016 stack testing at a sister facility (Drax Morehouse BioEnergy). Note that due to high variance in the three tests conducted for $SO_2$, Drax has chosen the highest reported hourly emissions as a conservative estimate. These emissions have also been scaled up to account for a 25% safety factor. Therefore, the new lb/ODT for these pollutants has been calculated based on the annual PTE after scaling up.

4. $PM_{10/2.5}$ emissions are based on a March 2019 engineering test at a sister facility (Drax Morehouse BioEnergy). These emissions have been scaled up to account for a 25% safety factor. Therefore, the new lb/ODT for these pollutants has been calculated based on the annual PTE after scaling up.

5. CO and $NO_x$ emissions are based on a December 2015 stack test for the RTO stack. These emissions have been scaled up to account for a 25% safety factor. Therefore, the new lb/ODT for these pollutants has been calculated based on the annual PTE after scaling up.

6. VOC and Formaldehyde emissions are based on stack testing performed at the site in November 2018. A 25% safety factor has been added to the test results for conservatism. Stack testing emissions account for an effective RTO control efficiency of 90%. Therefore, the new lb/ODT for these pollutants has been calculated based on the annual PTE after scaling up.

7. From July 2021 Performance Test.

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Biomass Furnace Emissions ***(INCLUDED FOR COMPLETENESS ONLY, EMISSIONS ACCOUNTED UNDER RTO)*** | RTO | AA-201 |

| Operating Data | | |
|---|---|---|
| Furnace capacity[1] | 165 | MMBtu/hr |
| WESP control efficiency[2] | 97.5 | % |
| RTO control efficiency[2] | 90.0 | % |
| HCl control efficiency[3] | 45.0 | % |
| Operating hours[1] | 8,760 | hrs/yr |

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[4,8] PTE (lb/hr) | Emission Rates[4,8] Annual (tons/yr) |
|---|---|---|---|---|
| *Criteria Pollutants* | | | | |
| $PM_{2.5}$ | 0.43 lb/MMBtu | AP-42; Table 1.6-1 | *1.77* | *7.77* |
| PM | 0.50 lb/MMBtu | AP-42; Table 1.6-1 | *2.06* | *9.03* |
| SO | 0.025 lb/MMBtu | AP-42; Table 1.6-2 | *4.13* | *18.07* |
| NOx | 0.22 lb/MMBtu | AP-42; Table 1.6-2 | *36.30* | *158.99* |
| CO | 0.60 lb/MMBtu | AP-42; Table 1.6-2 | *9.90* | *43.36* |
| VOC Total | 0.017 lb/MMBtu | AP-42; Table 1.6-3 | *0.28* | *1.23* |
| *Hazardous/Toxic Air Pollutants* | | | | |
| Acetaldehyde | 0.00083 lb/MMBtu | AP-42; Table 1.6-3 | *0.01* | *0.06* |
| Acrolein | 0.004 lb/MMBtu | AP-42; Table 1.6-3 | *0.07* | *0.290* |
| Benzene | 0.0042 lb/MMBtu | AP-42; Table 1.6-3 | *0.07* | *0.30* |
| Carbon tetrachloride | 0.000045 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | *0.003* |
| Chlorine | 0.00079 lb/MMBtu | AP-42; Table 1.6-3 | *0.01* | *0.06* |
| Chlorobenzene | 0.000033 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | *0.002* |
| Chloroform | 0.000028 lb/MMBtu | AP-42; Table 1.6-3 | *0.0005* | *0.002* |
| Chloromethane | 0.000023 lb/MMBtu | AP-42; Table 1.6-3 | *0.0004* | *0.002* |
| 1,2-Dibromoethane | 0.000055 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | *0.004* |
| 1,2-Dichloroethane | 0.000029 lb/MMBtu | AP-42; Table 1.6-3 | *0.0005* | *0.002* |
| Dichloromethane | 0.00029 lb/MMBtu | AP-42; Table 1.6-3 | *0.005* | *0.02* |
| 1,2-Dichloropropane | 0.000033 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | *0.002* |
| Ethylbenzene | 0.000031 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | *0.002* |
| Formaldehyde | 0.0044 lb/MMBtu | AP-42; Table 1.6-3 | *0.07* | *0.32* |
| Hydrochloric acid* | 0.019 lb/MMBtu | AP-42; Table 1.6-3 | *1.72* | *7.55* |
| Mercury (and compounds) | 0.0000035 lb/MMBtu | AP-42; Table 1.6-4 | *0.0006* | *0.003* |
| Naphthalene | 0.000097 lb/MMBtu | AP-42; Table 1.6-3 | *0.002* | *0.01* |
| Phenol | 0.000051 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | *0.004* |
| Polynuclear Aromatic Hydrocarbons | See Below | See Below | *0.0005* | *0.002* |
| Propionaldehyde | 0.000061 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | *0.004* |
| Styrene | 0.0019 lb/MMBtu | AP-42; Table 1.6-3 | *0.03* | *0.14* |
| Tetrachloroethane | 0.000038 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | *0.003* |
| Toluene | 0.00092 lb/MMBtu | AP-42; Table 1.6-3 | *0.02* | *0.07* |
| 1,1,1-Trichloroethane | 0.000031 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | *0.002* |
| Trichloroethylene | 0.00003 lb/MMBtu | AP-42; Table 1.6-3 | *0.0005* | *0.002* |
| Trichlorofluoromethane | 0.00041 lb/MMBtu | AP-42; Table 1.6-3 | *0.01* | *0.03* |
| Xylene | 0.000025 lb/MMBtu | AP-42; Table 1.6-3 | *0.0004* | *0.002* |
| Arsenic | 0.000022 lb/MMBtu | AP-42; Table 1.6-4 | *0.0001* | *0.0004* |
| Barium | 0.00017 lb/MMBtu | AP-42; Table 1.6-4 | *0.001* | *0.003* |
| Copper | 0.000049 lb/MMBtu | AP-42; Table 1.6-4 | *0.0002* | *0.001* |
| Lead | 0.000048 lb/MMBtu | AP-42; Table 1.6-4 | *0.0002* | *0.001* |
| Manganese | 0.0016 lb/MMBtu | AP-42; Table 1.6-4 | *0.01* | *0.03* |
| Nickel | 0.000033 lb/MMBtu | AP-42; Table 1.6-4 | *0.0001* | *0.001* |
| Phosphorus | 0.000027 lb/MMBtu | AP-42; Table 1.6-4 | *0.0001* | *0.0005* |
| Zinc (and compounds) | 0.00042 lb/MMBtu | AP-42; Table 1.6-4 | *0.002* | *0.01* |

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Biomass Furnace Emissions ***(INCLUDED FOR COMPLETENESS ONLY, EMISSIONS ACCOUNTED UNDER RTO)*** | RTO | AA-201 |

| Operating Data | | |
|---|---|---|
| Furnace capacity[1] | 165 | MMBtu/hr |
| WESP control efficiency[2] | 97.5 | % |
| RTO control efficiency[2] | 90.0 | % |
| HCl control efficiency[3] | 45.0 | % |
| Operating hours[1] | 8,760 | hrs/yr |

*Polynuclear Aromatic Hydrocarbons Emissions:*

| Pollutant | Emission Factor | | Reference | Emission Rates[4] PTE (lb/hr) | Emission Rates[4] Annual (tons/yr) |
|---|---|---|---|---|---|
| Acenaphthene | 9.1E-07 | lb/MMBtu | AP-42; Table 1.6-1 | *1.50E-05* | *6.58E-05* |
| Acenaphthylene | 5.0E-06 | lb/MMBtu | AP-42; Table 1.6-1 | *8.25E-05* | *3.61E-04* |
| Acetophenone | 3.2E-09 | lb/MMBtu | AP-42; Table 1.6-2 | *5.28E-08* | *2.31E-07* |
| Anthracene | 3.0E-06 | lb/MMBtu | AP-42; Table 1.6-2 | *4.95E-05* | *2.17E-04* |
| Benzo(a)anthracene | 6.5E-08 | lb/MMBtu | AP-42; Table 1.6-2 | *1.07E-06* | *4.70E-06* |
| Benzo(a)pyrene | 2.6E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *4.29E-05* | *1.88E-04* |
| Benzo(b)fluoranthene | 1.0E-07 | lb/MMBtu | AP-42; Table 1.6-3 | *1.65E-06* | *7.23E-06* |
| Benzo(e)pyrene | 2.6E-09 | lb/MMBtu | AP-42; Table 1.6-3 | *4.29E-08* | *1.88E-07* |
| Benzo(g,h,i)perylene | 9.3E-08 | lb/MMBtu | AP-42; Table 1.6-3 | *1.53E-06* | *6.72E-06* |
| Benzo(j,k)fluoranthene | 1.6E-07 | lb/MMBtu | AP-42; Table 1.6-3 | *2.64E-06* | *1.16E-05* |
| Benzo(k)fluoranthene | 3.6E-08 | lb/MMBtu | AP-42; Table 1.6-3 | *5.94E-07* | *2.60E-06* |
| 2-Chloronaphthalene | 2.4E-09 | lb/MMBtu | AP-42; Table 1.6-3 | *3.96E-08* | *1.73E-07* |
| Chrysene | 3.8E-08 | lb/MMBtu | AP-42; Table 1.6-3 | *6.27E-07* | *2.75E-06* |
| Dibenzo(a,h)anthracene | 9.1E-09 | lb/MMBtu | AP-42; Table 1.6-3 | *1.50E-07* | *6.58E-07* |
| Fluoranthene | 1.6E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *2.64E-05* | *1.16E-04* |
| Fluorene | 3.4E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *5.61E-05* | *2.46E-04* |
| Indeno(1,2,3,c,d)pyrene | 8.7E-08 | lb/MMBtu | AP-42; Table 1.6-3 | *1.44E-06* | *6.29E-06* |
| 2-Methylnaphthalene | 1.6E-07 | lb/MMBtu | AP-42; Table 1.6-3 | *2.64E-06* | *1.16E-05* |
| Perylene | 5.2E-10 | lb/MMBtu | AP-42; Table 1.6-3 | *8.58E-09* | *3.76E-08* |
| Phenanthrene | 7.0E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *1.16E-04* | *5.06E-04* |
| Pyrene | 3.7E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *6.11E-05* | *2.67E-04* |
| **Total** | | | | *0.0005* | *0.002* |

*Greenhouse Gases*

| Pollutant | Emission Factor[5] | | Biogenic GHG Mass Emission Rates[6] Annual (tons/yr) | Biogenic $CO_2e$ Emission Rates[6] GWP[7] | Biogenic $CO_2e$ Emission Rates[6] Annual (tons/yr) |
|---|---|---|---|---|---|
| $CO_2$ | 113.73 | lb/MMBtu | 0.00 | 1 | *0* |
| $CH_4$ | 0.00873 | lb/MMBtu | 6.31 | 25 | *157.729* |
| $N_2O$ | 0.00436 | lb/MMBtu | 3.15 | 298 | *938.99* |
| CO e | | | | | *1,097* |

REFERENCE/NOTES

1. Provided by facility.
2. Manufacturer guarantee.
3. HCl control efficiency based on engineering judgment.
4. $ER_{avg/max}$ (lb/hr) = Furnace capacity (MMBtu/hr) x EF (lb/MMBtu) x((100-Control factor)/100)
   $ER_{ann}$ (tons/yr) = ($ER_{avg}$ (lbs/hr) x Operating Time (hrs))/2000 lbs/ton
5. 40 CFR 98 Subpart C Table C-1, C-2 and AP-42, Section 10.6-2 (lb/ODT)
6. Emission rates (ER) calculated as specified in 40 CFR 98.33(a)(1)(iii) and 40 CFR 98.33(c)(1)(ii) and in accordance with 98.33(b)(1)(v) as follows:
   GHG: ER (tons/yr) = (Total) Firing Rate (MMBtu/hr) x Emission Factor (lb/MMBtu) x Operating Hours / 2000 lbs/ton
   $CO_2e$: ER (tons/yr) = GHG Mass Emission Rate x GWP
7. GWPs based on 40 CFR 98, Table A-1.
8. $PM_{10/2.5}$, CO, $SO_2$, NOx, and VOC emissions are included for representativeness. The total emissions out of the RTO stack have been accounted for in the overall RTO emissions estimate (AA-201).

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | EMISSION POINT ID | Emissions Point ID |
| By-pass During Furnace Startup/Shutdown | Furnace SUSD Bypass Stack | AA-203b |

| Operating Data | | |
|---|---|---|
| Furnace capacity[1] | 33.0 | MMBtu/hr |
| RTO control efficiency[2] | 0.0 | % |
| Operating hours[1] | 50 | hrs/yr |

| *Emission Totals:* | | | | |
|---|---|---|---|---|
| Pollutant | Emission Factor | Reference | Emission Rates[3,4] PTE (lb/hr) | Annual (tons/yr) |
| *Criteria Pollutants* | | | | |
| CO | 0.60 lb/MMBtu | AP-42; Table 1.6-2 | 19.80 | 0.50 |
| VOC Total | 0.017 lb/MMBtu | AP-42; Table 1.6-3 | 0.56 | 0.01 |
| *Hazardous/Toxic Air Pollutants* | | | | |
| Acetaldehyde | 0.00083 lb/MMBtu | AP-42; Table 1.6-3 | *0.03* | 0.0007 |
| Acrolein | 0.004 lb/MMBtu | AP-42; Table 1.6-3 | *0.13* | 0.0033 |
| Benzene | 0.0042 lb/MMBtu | AP-42; Table 1.6-3 | *0.14* | 0.0035 |
| Carbon tetrachloride | 0.000045 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0000 |
| Chlorine | 0.00079 lb/MMBtu | AP-42; Table 1.6-3 | *0.03* | 0.0007 |
| Chlorobenzene | 0.000033 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0000 |
| Chloroform | 0.000028 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0000 |
| Chloromethane | 0.000023 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0000 |
| 1,2-Dibromoethane | 0.000055 lb/MMBtu | AP-42; Table 1.6-3 | *0.002* | 0.0000 |
| 1,2-Dichloroethane | 0.000029 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0000 |
| Dichloromethane | 0.00029 lb/MMBtu | AP-42; Table 1.6-3 | *0.01* | 0.0002 |
| 1,2-Dichloropropane | 0.000033 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0000 |
| Ethylbenzene | 0.000031 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0000 |
| Formaldehyde | 0.0044 lb/MMBtu | AP-42; Table 1.6-3 | *0.15* | 0.0036 |
| Hydrochloric acid* | 0.019 lb/MMBtu | AP-42; Table 1.6-3 | *0.63* | 0.0157 |
| Mercury (and compounds) | 0.0000035 lb/MMBtu | AP-42; Table 1.6-4 | *1.16E-04* | 0.0000 |
| Naphthalene | 0.000097 lb/MMBtu | AP-42; Table 1.6-3 | *0.003* | 0.0001 |
| Phenol | 0.000051 lb/MMBtu | AP-42; Table 1.6-3 | *0.002* | 0.0000 |
| Polynuclear Aromatic Hydrocarbons | See Below | See Below | *9.23E-04* | 0.0000 |
| Propionaldehyde | 0.000061 lb/MMBtu | AP-42; Table 1.6-3 | *0.002* | 0.0001 |
| Styrene | 0.0019 lb/MMBtu | AP-42; Table 1.6-3 | *0.06* | 0.0016 |
| Tetrachloroethane | 0.000038 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0000 |
| Toluene | 0.00092 lb/MMBtu | AP-42; Table 1.6-3 | *0.03* | 0.0008 |
| 1,1,1-Trichloroethane | 0.000031 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0000 |
| Trichloroethylene | 0.00003 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0000 |
| Trichlorofluoromethane | 0.00041 lb/MMBtu | AP-42; Table 1.6-3 | *0.01* | 0.0003 |
| Xylene | 0.000025 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0000 |
| Arsenic | 0.000022 lb/MMBtu | AP-42; Table 1.6-4 | *0.001* | 0.0000 |
| Barium | 0.00017 lb/MMBtu | AP-42; Table 1.6-4 | *0.01* | 0.0001 |
| Copper | 0.000049 lb/MMBtu | AP-42; Table 1.6-4 | *0.002* | 0.0000 |
| Lead | 0.000048 lb/MMBtu | AP-42; Table 1.6-4 | *0.002* | 0.0000 |
| Manganese | 0.0016 lb/MMBtu | AP-42; Table 1.6-4 | *0.05* | 0.0013 |
| Nickel | 0.000033 lb/MMBtu | AP-42; Table 1.6-4 | *0.001* | 0.0000 |
| Phosphorus | 0.000027 lb/MMBtu | AP-42; Table 1.6-4 | *0.001* | 0.0000 |
| Zinc (and compounds) | 0.00042 lb/MMBtu | AP-42; Table 1.6-4 | *0.01* | 0.0003 |

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | EMISSION POINT ID | Emissions Point ID |
| By-pass During Furnace Startup/Shutdown | Furnace SUSD Bypass Stack | AA-203b |

| Operating Data | | |
|---|---|---|
| Furnace capacity[1] | 33.0 | MMBtu/hr |
| RTO control efficiency[2] | 0.0 | % |
| Operating hours[1] | 50 | hrs/yr |

*Polynuclear Aromatic Hydrocarbons Emissions:*

| Pollutant | Emission Factor | | Reference | Emission Rates[3,4] PTE (lb/hr) | Emission Rates[3,4] Annual (tons/yr) |
|---|---|---|---|---|---|
| Acenaphthene | 9.1E-07 | lb/MMBtu | AP-42; Table 1.6-1 | *3.00E-05* | 7.51E-07 |
| Acenaphthylene | 5.0E-06 | lb/MMBtu | AP-42; Table 1.6-1 | *1.65E-04* | 4.13E-06 |
| Acetophenone | 3.2E-09 | lb/MMBtu | AP-42; Table 1.6-2 | *1.06E-07* | 2.64E-09 |
| Anthracene | 3.0E-06 | lb/MMBtu | AP-42; Table 1.6-2 | *9.90E-05* | 2.48E-06 |
| Benzo(a)anthracene | 6.5E-08 | lb/MMBtu | AP-42; Table 1.6-2 | *2.15E-06* | 5.36E-08 |
| Benzo(a)pyrene | 2.6E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *8.58E-05* | 2.15E-06 |
| Benzo(b)fluoranthene | 1.0E-07 | lb/MMBtu | AP-42; Table 1.6-3 | *3.30E-06* | 8.25E-08 |
| Benzo(e)pyrene | 2.6E-09 | lb/MMBtu | AP-42; Table 1.6-3 | *8.58E-08* | 2.15E-09 |
| Benzo(g,h,i)perylene | 9.3E-08 | lb/MMBtu | AP-42; Table 1.6-3 | *3.07E-06* | 7.67E-08 |
| Benzo(j,k)fluoranthene | 1.6E-07 | lb/MMBtu | AP-42; Table 1.6-3 | *5.28E-06* | 1.32E-07 |
| Benzo(k)fluoranthene | 3.6E-08 | lb/MMBtu | AP-42; Table 1.6-3 | *1.19E-06* | 2.97E-08 |
| 2-Chloronaphthalene | 2.4E-09 | lb/MMBtu | AP-42; Table 1.6-3 | *7.92E-08* | 1.98E-09 |
| Chrysene | 3.8E-08 | lb/MMBtu | AP-42; Table 1.6-3 | *1.25E-06* | 3.14E-08 |
| Dibenzo(a,h)anthracene | 9.1E-09 | lb/MMBtu | AP-42; Table 1.6-3 | *3.00E-07* | 7.51E-09 |
| Fluoranthene | 1.6E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *5.28E-05* | 1.32E-06 |
| Fluorene | 3.4E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *1.12E-04* | 2.81E-06 |
| Indeno(1,2,3,c,d)pyrene | 8.7E-08 | lb/MMBtu | AP-42; Table 1.6-3 | *2.87E-06* | 7.18E-08 |
| 2-Methylnaphthalene | 1.6E-07 | lb/MMBtu | AP-42; Table 1.6-3 | *5.28E-06* | 1.32E-07 |
| Perylene | 5.2E-10 | lb/MMBtu | AP-42; Table 1.6-3 | *1.72E-08* | 4.29E-10 |
| Phenanthrene | 7.0E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *2.31E-04* | 5.78E-06 |
| Pyrene | 3.7E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *1.22E-04* | 3.05E-06 |
| **Total** | | | | *0.0009* | 2.31E-05 |

REFERENCE/NOTES

1. Conservative assumption. Furnace capacity during startup-shutdown operations is estimated to be no more than 20% (33 MMbtu/hr) of furnace max firing rate while also being no less than 10% (16.5 MMBtu/hr) of furnace max firing rate (165 MMBtu/hr).

2. RTO is assumed to be down for maintenance.

3. $ER_{avg/max}$ (lb/hr) = Furnace capacity (MMBtu/hr) x EF (lb/MMBtu) x((100-Control factor)/100)

   $ER_{ann}$ (tons/yr) = ($ER_{avg}$ (lbs/hr) x Operating Time (hrs))/2000 lbs/ton

4. CO, and VOC, and HAP emissions are included because these two pollutants are specifically controlled by the RTO. GHG pollutants are expected to have higher emissions during normal operations due to higher furnace capacity, and those emissions have already been included under the RTO emissions point ID (AA-201).

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | EMISSION POINT ID | Emissions Point ID |
| By-pass During Furnace Idling | Furnace Idling Bypass Stack | AA-203c |

| Operating Data | | |
|---|---|---|
| Furnace capacity[1] | 16.5 | MMBtu/hr |
| RTO control efficiency[2] | 0.0 | % |
| Operating hours[1] | 500 | hrs/yr |

| *Emission Totals:* | | | | |
|---|---|---|---|---|
| Pollutant | Emission Factor | Reference | Emission Rates[3,4] PTE (lb/hr) | Annual (tons/yr) |
| *Criteria Pollutants* | | | | |
| CO | 0.60 lb/MMBtu | AP-42; Table 1.6-2 | 9.90 | 2.48 |
| VOC Total | 0.017 lb/MMBtu | AP-42; Table 1.6-3 | 0.28 | 0.07 |
| *Hazardous/Toxic Air Pollutants* | | | | |
| Acetaldehyde | 0.00083 lb/MMBtu | AP-42; Table 1.6-3 | *0.01* | 0.0034 |
| Acrolein | 0.004 lb/MMBtu | AP-42; Table 1.6-3 | *0.07* | 0.0165 |
| Benzene | 0.0042 lb/MMBtu | AP-42; Table 1.6-3 | *0.07* | 0.0173 |
| Carbon tetrachloride | 0.000045 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0002 |
| Chlorine | 0.00079 lb/MMBtu | AP-42; Table 1.6-3 | *0.01* | 0.0033 |
| Chlorobenzene | 0.000033 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0001 |
| Chloroform | 0.000028 lb/MMBtu | AP-42; Table 1.6-3 | *0.000* | 0.0001 |
| Chloromethane | 0.000023 lb/MMBtu | AP-42; Table 1.6-3 | *0.000* | 0.0001 |
| 1,2-Dibromoethane | 0.000055 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0002 |
| 1,2-Dichloroethane | 0.000029 lb/MMBtu | AP-42; Table 1.6-3 | *0.000* | 0.0001 |
| Dichloromethane | 0.00029 lb/MMBtu | AP-42; Table 1.6-3 | *0.00* | 0.0012 |
| 1,2-Dichloropropane | 0.000033 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0001 |
| Ethylbenzene | 0.000031 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0001 |
| Formaldehyde | 0.0044 lb/MMBtu | AP-42; Table 1.6-3 | *0.07* | 0.0182 |
| Hydrochloric acid* | 0.019 lb/MMBtu | AP-42; Table 1.6-3 | *0.31* | 0.0784 |
| Mercury (and compounds) | 0.0000035 lb/MMBtu | AP-42; Table 1.6-4 | *5.78E-05* | 0.0000 |
| Naphthalene | 0.000097 lb/MMBtu | AP-42; Table 1.6-3 | *0.002* | 0.0004 |
| Phenol | 0.000051 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0002 |
| Polynuclear Aromatic Hydrocarbons | See Below | See Below | *4.61E-04* | 0.0001 |
| Propionaldehyde | 0.000061 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0003 |
| Styrene | 0.0019 lb/MMBtu | AP-42; Table 1.6-3 | *0.03* | 0.0078 |
| Tetrachloroethane | 0.000038 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0002 |
| Toluene | 0.00092 lb/MMBtu | AP-42; Table 1.6-3 | *0.02* | 0.0038 |
| 1,1,1-Trichloroethane | 0.000031 lb/MMBtu | AP-42; Table 1.6-3 | *0.001* | 0.0001 |
| Trichloroethylene | 0.00003 lb/MMBtu | AP-42; Table 1.6-3 | *0.000* | 0.0001 |
| Trichlorofluoromethane | 0.00041 lb/MMBtu | AP-42; Table 1.6-3 | *0.01* | 0.0017 |
| Xylene | 0.000025 lb/MMBtu | AP-42; Table 1.6-3 | *0.000* | 0.0001 |
| Arsenic | 0.000022 lb/MMBtu | AP-42; Table 1.6-4 | *0.000* | 0.0001 |
| Barium | 0.00017 lb/MMBtu | AP-42; Table 1.6-4 | *0.00* | 0.0007 |
| Copper | 0.000049 lb/MMBtu | AP-42; Table 1.6-4 | *0.001* | 0.0002 |
| Lead | 0.000048 lb/MMBtu | AP-42; Table 1.6-4 | *0.001* | 0.0002 |
| Manganese | 0.0016 lb/MMBtu | AP-42; Table 1.6-4 | *0.03* | 0.0066 |
| Nickel | 0.000033 lb/MMBtu | AP-42; Table 1.6-4 | *0.001* | 0.0001 |
| Phosphorus | 0.000027 lb/MMBtu | AP-42; Table 1.6-4 | *0.000* | 0.0001 |
| Zinc (and compounds) | 0.00042 lb/MMBtu | AP-42; Table 1.6-4 | *0.01* | 0.0017 |

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | EMISSION POINT ID | Emissions Point ID |
| By-pass During Furnace Idling | Furnace Idling Bypass Stack | AA-203c |

| Operating Data | | |
|---|---|---|
| Furnace capacity[1] | 16.5 | MMBtu/hr |
| RTO control efficiency[2] | 0.0 | % |
| Operating hours[1] | 500 | hrs/yr |

*Polynuclear Aromatic Hydrocarbons Emissions:*

| Pollutant | Emission Factor | | Reference | Emission Rates[3,4] Avg (lb/hr) | Annual (tons/yr) |
|---|---|---|---|---|---|
| Acenaphthene | 9.1E-07 | lb/MMBtu | AP-42; Table 1.6-1 | *1.50E-05* | 3.75E-06 |
| Acenaphthylene | 5.0E-06 | lb/MMBtu | AP-42; Table 1.6-1 | *8.25E-05* | 2.06E-05 |
| Acetophenone | 3.2E-09 | lb/MMBtu | AP-42; Table 1.6-2 | *5.28E-08* | 1.32E-08 |
| Anthracene | 3.0E-06 | lb/MMBtu | AP-42; Table 1.6-2 | *4.95E-05* | 1.24E-05 |
| Benzo(a)anthracene | 6.5E-08 | lb/MMBtu | AP-42; Table 1.6-2 | *1.07E-06* | 2.68E-07 |
| Benzo(a)pyrene | 2.6E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *4.29E-05* | 1.07E-05 |
| Benzo(b)fluoranthene | 1.0E-07 | lb/MMBtu | AP-42; Table 1.6-3 | *1.65E-06* | 4.13E-07 |
| Benzo(e)pyrene | 2.6E-09 | lb/MMBtu | AP-42; Table 1.6-3 | *4.29E-08* | 1.07E-08 |
| Benzo(g,h,i)perylene | 9.3E-08 | lb/MMBtu | AP-42; Table 1.6-3 | *1.53E-06* | 3.84E-07 |
| Benzo(j,k)fluoranthene | 1.6E-07 | lb/MMBtu | AP-42; Table 1.6-3 | *2.64E-06* | 6.60E-07 |
| Benzo(k)fluoranthene | 3.6E-08 | lb/MMBtu | AP-42; Table 1.6-3 | *5.94E-07* | 1.49E-07 |
| 2-Chloronaphthalene | 2.4E-09 | lb/MMBtu | AP-42; Table 1.6-3 | *3.96E-08* | 9.90E-09 |
| Chrysene | 3.8E-08 | lb/MMBtu | AP-42; Table 1.6-3 | *6.27E-07* | 1.57E-07 |
| Dibenzo(a,h)anthracene | 9.1E-09 | lb/MMBtu | AP-42; Table 1.6-3 | *1.50E-07* | 3.75E-08 |
| Fluoranthene | 1.6E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *2.64E-05* | 6.60E-06 |
| Fluorene | 3.4E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *5.61E-05* | 1.40E-05 |
| Indeno(1,2,3,c,d)pyrene | 8.7E-08 | lb/MMBtu | AP-42; Table 1.6-3 | *1.44E-06* | 3.59E-07 |
| 2-Methylnaphthalene | 1.6E-07 | lb/MMBtu | AP-42; Table 1.6-3 | *2.64E-06* | 6.60E-07 |
| Perylene | 5.2E-10 | lb/MMBtu | AP-42; Table 1.6-3 | *8.58E-09* | 2.15E-09 |
| Phenanthrene | 7.0E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *1.16E-04* | 2.89E-05 |
| Pyrene | 3.7E-06 | lb/MMBtu | AP-42; Table 1.6-3 | *6.11E-05* | 1.53E-05 |
| **Total** | | | | *0.0005* | 1.15E-04 |

REFERENCE/NOTES

1. Conservative assumption. Furnace capacity during idling was previously permitted for 5 MMbtu/hr. Drax is requesting that this capacity be updated to be no more than 10% (16.5 MMBtu/hr) of furnace max firing rate (165 MMBtu/hr).

2. RTO is assumed to be down for maintenance.

3. $ER_{avg/max}$ (lb/hr) = Furnace capacity (MMBtu/hr) x EF (lb/MMBtu) x((100-Control factor)/100)

   $ER_{ann}$ (tons/yr) = ($ER_{avg}$ (lbs/hr) x Operating Time (hrs))/2000 lbs/ton

4. CO, and VOC, and HAP emissions are included because these two pollutants are specifically controlled by the RTO. GHG pollutants are expected to have higher emissions during normal operations due to higher furnace capacity, and those emissions have already been included under the RTO emissions point ID (AA-201).

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| By-pass During Dryer Startup/Shutdown | Dryer SUSD Bypass Stack | AA-204b |

The RTO stack exhausts controlled process VOC and PM emissions from the chip dryer as well as controlled combustion emissions from the biomass furnace. PM emissions are controlled with a wet electrostatic precipitator (WESP). VOC emissions from these sources are controlled by the RTO. Combustion emissions from the RTO's gas burner also exhaust out of the stack.

| Operating Data | |
|---|---|
| Dryer Capacity[1] | 23 ODT*/hr |
| Operating hours[1] | 50 hrs/yr |

*ODT = oven dried ton (U.S.) of chips

| *Emission Totals:* | | | | |
|---|---|---|---|---|
| Pollutant | Emission Factor | Reference | Emission Rates Hourly (lb/hr) | Annual (tons/yr) |
| *Criteria Pollutants* | | | | |
| $PM_{2.5}$ | 2.20 lb/ODT | See Note 2 | 50.91 | 1.27 |
| PM | 2.20 lb/ODT | See Note 2 | 50.91 | 1.27 |
| SO | 0.15 lb/ODT | See Note 3 | 3.47 | 0.09 |
| NOx | 2.70 lb/ODT | See Note 2 | 62.48 | 1.56 |
| CO | 3.50 lb/ODT | See Note 2 | 81.00 | 2.02 |
| VOC Total | 4.70 lb/ODT | See Note 2 | 108.77 | 2.72 |
| *Hazardous/Toxic Air Pollutants* | | | | |
| Acetaldehyde | 0.08 lb/ODT | See Note 4 | 1.74 | 0.04 |
| Acrolein | 2.30E-02 lb/ODT | See Note 4 | 0.53 | 0.01 |
| Benzene | 7.60E-03 lb/ODT | See Note 4 | 0.18 | 0.00 |
| Cumene | 2.00E-03 lb/ODT | See Note 4 | 0.05 | 0.00 |
| Formaldehyde | 0.140 lb/ODT | See Note 4 | 3.24 | 0.08 |
| Methylene Chloride | 1.80E-03 lb/ODT | See Note 4 | 0.04 | 0.001 |
| Methanol | 0.110 lb/ODT | See Note 4 | 2.55 | 0.06 |
| Methyl Isobutyl Ketone | 6.90E-03 lb/ODT | See Note 4 | 0.16 | 0.004 |
| Phenol | 2.80E-02 lb/ODT | See Note 4 | 0.65 | 0.02 |
| Proprionaldehyde | 1.30E-02 lb/ODT | See Note 4 | 0.30 | 0.01 |
| Styrene | 3.60E-04 lb/ODT | See Note 4 | 0.01 | 0.00 |
| Toluene | 1.30E-02 lb/ODT | See Note 4 | 0.30 | 0.01 |
| Xylene | 4.80E-04 lb/ODT | See Note 4 | 0.01 | 0.00 |
| | | **Total HAP Emissions** | **9.75** | **0.24** |

REFERENCE/NOTES

1. Based on dryer feed rate information provided Josh Jones (Drax Biomass) to Sharon Killian (Trinity) via email on December 14, 2021. At 25% feed rate, the capacity is 16.53 ODT/hr. therefore, at 35% feed rate, the capacity is calaculated as 23 ODT/hr.

2. Emission factors for PM, CO, VOC, and NOx are based on AP-42 Chapter 10.6. Emissions have been conserv atively estimated based on SCC 3-07-006-25 assuming inlet moisture content > 50%, dry basis.

3. $SO_2$ emission rates are based on the results of February 2016 stack testing at a sister facility (Drax Morehouse BioEnergy). Note that due to high variance in the three tests conducted for $SO_2$, Drax has chosen the highest reported hourly emissions as a conservative estimate. These emissions have also been scaled up to account for a 25% safety factor. Therefore, the new lb/ODT for these pollutants has been calculated based on the annual PTE after scaling up.

4. HAP emissions are based on AP-42 Chapter 10.6, Table 10.6.2-3. Emissions have been conservatively estimated based on SCC 3-07-006-25 assuming inlet moisture content > 50%, dry basis. GHG pollutants are expected to have higher emissions during normal operations due to higher furnace capacity, and those emissions have already been included under the RTO emissions point ID (AA-201).

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Natural Gas RTO Burner ***(INCLUDED FOR COMPLETENESS ONLY, EMISSIONS ACCOUNTED UNDER RTO)*** | RTO | AA-201 |

| Operating Data | | |
|---|---|---|
| Burner capacity[1] | 24 | MMBtu/hr |
| Natural gas HHV[2] | 1,020 | Btu/scf |
| Operating hours[1] | 8,760 | hrs/yr |

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[3,7] PTE (lb/hr) | Emission Rates[3,7] Annual (tons/yr) |
|---|---|---|---|---|
| *Criteria Pollutants* | | | | |
| $PM_{2.5}$ | 7.6 $lb/10^6$ scf | AP 42; Table 1.4-2 | *0.18* | *0.78* |
| PM | 7.6 $lb/10^6$ scf | AP 42; Table 1.4-2 | *0.18* | *0.78* |
| SO | 0.6 $lb/10^6$ scf | AP 42; Table 1.4-2 | *0.01* | *0.06* |
| NOx | 100 $lb/10^6$ scf | AP 42; Table 1.4-1 | *2.35* | *10.31* |
| CO | 84 $lb/10^6$ scf | AP 42; Table 1.4-1 | *1.98* | *8.66* |
| VOC Total | 5.5 $lb/10^6$ scf | AP 42; Table 1.4-2 | *0.13* | *0.57* |
| *Hazardous/Toxic Air Pollutants* | | | | |
| Formaldehyde | 0.075 $lb/10^6$ scf | AP 42; Table 1.4-3 | *0.002* | *0.01* |
| n-Hexane | 1.8 $lb/10^6$ scf | AP 42; Table 1.4-3 | *0.04* | *0.19* |

*Greenhouse Gases*

| Pollutant | Emission Factor[4] | GHG Mass Emission Rates[5] Annual (tons/yr) | GWP[6] | $CO_2e$ Emission Rates[6] Annual (tons/yr) |
|---|---|---|---|---|
| $CO_2$ | 53.06 kg/MMBtu | 12298.76 | 1 | *12,299* |
| $CH_4$ | 0.001 kg/MMBtu | 0.23 | 25 | *5.790* |
| $N_2O$ | 0.0001 kg/MMBtu | 0.02 | 298 | *6.91* |
| CO e | | | | *12,312* |

REFERENCE/NOTES

1. Provided by facility.
2. AP-42; Chapter 1.4 - Natural Gas Combustion.
3. $ER_{avg/max}$ (lb/hr) = Furnace capacity (MMBtu/hr) x (EF ($lb/10^6$ scf)/HHV (Btu/scf))
   $ER_{ann}$ (tons/yr) = ($ER_{avg}$ (lbs/hr) x Operating Time (hrs))/2000 lbs/ton
4. Emission factor based on 40 CFR 98, Tables C-1 and C-2, for Petroleum (Natural Gas).
5. Emission rates (ER) calculated as specified in 40 CFR 98.33(a)(1)(iii) and 40 CFR 98.33(c)(1)(ii) and in accordance with 98.33(b)(1)(v) as follows:

   GHG: ER (tons/yr) = (Total) Firing Rate (MMBtu/hr) x (Emission Factor (kg/$10^6$ Btu) x 1000 g/kg / 453.59 g/lb) x Operating Hours (hr/yr)/ 2000 lbs/ton

   $CO_2e$: ER (tons/yr) = GHG Mass Emission Rate x GWP
6. GWPs based on 40 CFR 98, Table A-1.
7. PM10/2.5, CO, SO2, NOx, and VOC emissions are included for representativeness. The total emissions out of the RTO stack have been accounted for in the overall RTO emissions estimate (AA-201).

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Primary Hammermill Feed Silo with bin vent | HFS | AA-302 |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 1,500 | acfm |
| Annual throughput[1] | 624,700 | ODT*/yr |
| Potential maximum hourly throughput[1] | 71.31 | ODT*/hr |
| Exhaust temperature[1] | 77 | °F |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates PTE (lb/hr) | Emission Rates Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.015 gr/scf | Vendor guarantee | 0.19 | 0.84 |
| PM | 0.015 gr/scf | Vendor guarantee | 0.19 | 0.84 |
| VOC Total | 0.021 lb/ODT | Based on scaled-up stack test results[2] | 1.48 | 6.50 |
| Methanol | 0.0010 lb/ODT | Based on scaled-up stack test results[2] | 0.07 | 0.33 |
| Formaldehyde | 0.0020 lb/ODT | Based on scaled-up stack test results[2] | 0.14 | 0.62 |
| Acetaldehyde | 0.0010 lb/ODT | Based on scaled-up stack test results[2] | 0.07 | 0.33 |

REFERENCE/NOTES

1. Based on production information provided Josh Jones (Drax Biomass) to Sharon Killian (Trinity) on February 16, 2022 via email.

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016. These emissions have been scaled up to account for a 25% safety factor.

3. PM Emission rates (ER) calculated as follows:

   PM $ER_{avg/max}$ (lb/hr) = ((EF (gr/scf) x Exhaust Flow (acfm)) x (60 min/hr) x (1 lb/7000 gr) x (Standard Temp (°R )/Actual Temp (°R ))

   PM $ER_{ann}$ (tons/yr) = (PM $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC/TAP ER calculated as follows:

   $VOC/TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)

   $VOC/TAP_{avg}$ (lb/hr) = ($VOC/TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)

   $VOC/TAP_{max}$ (lb/hr) = Potential max hourly throughput (ODT/hr) x EF (lb/ODT)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Primary Hammermill Pneumatic System Vents 1 through 6 ***(INCLUDED FOR COMPLETENESS ONLY, EMISSIONS ACCOUNTED UNDER RCO)*** | HPS1-HPS6 | AA-303 |

| Operating Data | | |
|---|---|---|
| Exhaust flow per vent[1] | 9,000 | acfm |
| Annual throughput per vent[1] | 104,117 | ODT*/yr |
| Maximum hourly throughput per vent[1] | 11.89 | ODT*/hr |
| Number of Vents | 6 | |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[5] PTE (lb/hr) | Emission Rates[5] Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.005 lb/ODT | Based on scaled-up stack test results[3] | *0.38* | *1.68* |
| PM | 0.007 lb/ODT | Based on scaled-up stack test results[3] | *0.52* | *2.27* |
| VOC Total | 0.43 lb/ODT | Based on scaled-up stack test results[4] | *30.37* | *133.04* |
| Methanol | 0.0027 lb/ODT | Based on scaled-up stack test results[2] | *0.19* | *0.84* |
| Formaldehyde | 0.0056 lb/ODT | Based on scaled-up stack test results[2] | *0.40* | *1.75* |
| Acetaldehyde | 0.0027 lb/ODT | Based on scaled-up stack test results[2] | *0.19* | *0.84* |

REFERENCE/NOTES

1. Based on production information provided Josh Jones (Drax Biomass) to Sharon Killian (Trinity) on February 16, 2022 via email.
2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016. These emissions have been scaled up to account for a 25% safety factor.
3. PM emission rates calculated based on March 2019 engineering testing of the hammermills at a sister facility (Drax Morehouse BioEnergy) with an additional 25% safety factor.

   PM $ER_{ann}$ (tons/yr) = (PM $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)
4. VOC emission rates calculated based on November 2018 engineering testing of the hammermills at the site with an additional 25% safety factor. As the hammermills are permitted under a single emission point ID (AA-004), the hourly emissions have been estimated as the sum of the 3-hr average hourly stack tested emissions for each vent.

   VOC $ER_{ann}$ (tons/yr) = (VOC $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)
5. TAP ER calculated as follows:

   $TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)

   $TAP_{avg}$ (lb/hr) = (VOC/$TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Truck Dump | DSTD | AA-304 |

| Operating Data | | |
|---|---|---|
| Potential maximum hourly throughput[1] | 150 | MTPH |
| Annual throughput through source[1] | 467,316 | ODT*/yr |
| Potential average hourly throughput[1] | 53.35 | ODT*/hr |
| Moisture Content[2] | 8 | % |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates PTE (lb/hr) | Emission Rates Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{10}$ | 1.61E-04 lb/ODT | AP-42, Section 13.2.4 | 0.01 | 0.04 |
| $PM_{2.5}$ | 2.44E-05 lb/ODT | AP-42, Section 13.2.4 | 0.001 | 0.006 |

REFERENCE/NOTES

1. Based on production information provided by Josh Jones (Drax Biomass) to Sharon Killian (Trinity) via email.
2. Moisture Content is based on similar information for pine and hardwood dry shavings at other pellet mills in Mississippi.
3. PM emission rates calculated based on AP-42, Section 13.2.4 - Aggregate Handling and Storage Piles, Equation 13.2.1, (11/06). Wind speed assumed to be no more than 5 mph for the area assuming calm winds.

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Secondary Hammermill Silo 1 with Bin Vent | SHFS1 | AA-305 |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 1,500 | acfm |
| Annual throughput through source[1] | 416,467 | ODT*/yr |
| Potential maximum hourly throughput[1] | 47.54 | ODT*/hr |
| Exhaust temperature[1] | 77 | °F |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates PTE (lb/hr) | Emission Rates Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.015 gr/scf | Vendor guarantee | 0.19 | 0.84 |
| PM | 0.015 gr/scf | Vendor guarantee | 0.19 | 0.84 |
| VOC Total | 0.0278 lb/ODT | Based on scaled up stack test results[2] | 1.32 | 5.79 |
| Methanol | 0.0014 lb/ODT | Based on scaled up stack test results[2] | 0.07 | 0.30 |
| Formaldehyde | 0.0027 lb/ODT | Based on scaled up stack test results[2] | 0.13 | 0.55 |
| Acetaldehyde | 0.0014 lb/ODT | Based on scaled up stack test results[2] | 0.07 | 0.30 |

REFERENCE/NOTES

1. Provided by facility. It is assumed that the No.1 feed silo bin vent will store up to 66.6% of the total feed throughput.

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016. These emissions have been scaled up to account for a 25% safety factor.

3. PM Emission rates (ER) calculated as follows:
   PM $ER_{avg/max}$ (lb/hr) = ((EF (gr/scf) x Exhaust Flow (acfm)) x (60 min/hr) x (1 lb/7000 gr) x (Standard Temp (°R )/Actual Temp (°R ))
   PM $ER_{ann}$ (tons/yr) = (PM $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC/TAP ER calculated as follows:
   $VOC/TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)
   $VOC/TAP_{avg}$ (lb/hr) = ($VOC/TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)
   $VOC/TAP_{max}$ (lb/hr) = Potential max hourly throughput (ODT/hr) x EF (lb/ODT)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Secondary Hammermill Silo 2 with Bin Vent | SHFS2 | AA-306 |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 1,500 | acfm |
| Annual throughput through source[1] | 208,233 | ODT*/yr |
| Potential maximum hourly throughput[1] | 23.77 | ODT*/hr |
| Exhaust temperature[1] | 77 | °F |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates PTE (lb/hr) | Emission Rates Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.015 gr/scf | Vendor guarantee | 0.19 | 0.84 |
| PM | 0.015 gr/scf | Vendor guarantee | 0.19 | 0.84 |
| VOC Total | 0.0278 lb/ODT | Based on scaled up stack test results[2] | 0.74 | 3.23 |
| Methanol | 0.0014 lb/ODT | Based on scaled up stack test results[2] | 0.03 | 0.15 |
| Formaldehyde | 0.0027 lb/ODT | Based on scaled up stack test results[2] | 0.06 | 0.28 |
| Acetaldehyde | 0.0014 lb/ODT | Based on scaled up stack test results[2] | 0.03 | 0.15 |

REFERENCE/NOTES

1. Provided by facility. It is assumed that the No.2 feed silo bin vent will store up to 33.3% of the total feed throughput.

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016. These emissions have been scaled up to account for a 25% safety factor.

3. PM Emission rates (ER) calculated as follows:

   PM $ER_{avg/max}$ (lb/hr) = ((EF (gr/scf) x Exhaust Flow (acfm)) x (60 min/hr) x (1 lb/7000 gr) x (Standard Temp (°R )/Actual Temp (°R ))

   PM $ER_{ann}$ (tons/yr) = (PM $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC/TAP ER calculated as follows:

   $VOC/TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)

   $VOC/TAP_{avg}$ (lb/hr) = ($VOC/TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)

   $VOC/TAP_{max}$ (lb/hr) = Potential max hourly throughput (ODT/hr) x EF (lb/ODT)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Secondary Hammermill Pneumatic System No. 1 ***(INCLUDED FOR COMPLETENESS ONLY, EMISSIONS ACCOUNTED UNDER RCO)*** | SHPS1 | AA-307A |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 9,000 | acfm |
| Average Annual throughput[1] | 64,228 | ODT/yr |
| Maximum Annual throughput[1] | 208,233 | ODT*/yr |
| Maximum hourly throughput[1] | 23.77 | ODT*/hr |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[5] | |
|---|---|---|---|---|
| | | | PTE (lb/hr) | Annual (tons/yr) |
| $PM_{2.5}$ | 0.005 lb/ODT | Based on stack test results[3] | 0.11 | 0.50 |
| PM | 0.006 lb/ODT | Based on stack test results[3] | 0.13 | 0.58 |
| VOC Total | 0.35 lb/ODT | Based on stack test results[4] | 8.84 | 38.72 |
| Methanol | 0.0017 lb/ODT | Based on stack test results[2] | 0.04 | 0.186 |
| Formaldehyde | 0.0032 lb/ODT | Based on stack test results[2] | 0.08 | 0.358 |
| Acetaldehyde | 0.0017 lb/ODT | Based on stack test results[2] | 0.04 | 0.186 |

REFERENCE/NOTES

1. Based on production information provided by Josh Jones (Drax Biomass) to Sharon Killian (Trinity) on February 16, 2022 via email.

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016.

3. PM emission rates calculated based on March 2019 engineering testing of the hammermills at a sister facility (Drax Morehouse BioEnergy) with an additional 25% safety factor.

   PM $ER_{ann}$ (tons/yr) = (PM $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC emission rates calculated based on November 2018 engineering testing of the secondary hammermills at the site with an additional 25% safety factor.

   VOC $ER_{ann}$ (tons/yr) = (VOC $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

5. TAP ER calculated as follows:
   $TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)
   $TAP_{avg}$ (lb/hr) = (VOC/$TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Secondary Hammermill Pneumatic System No. 2 ***(INCLUDED FOR COMPLETENESS ONLY, EMISSIONS ACCOUNTED UNDER RCO)*** | SHPS2 | AA-307B |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 9,000 | acfm |
| Average Annual throughput[1] | 64,228 | ODT/yr |
| Maximum Annual throughput[1] | 208,233 | ODT*/yr |
| Maximum hourly throughput[1] | 23.77 | ODT*/hr |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[5] PTE (lb/hr) | Emission Rates[5] Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.005 lb/ODT | Based on stack test results[3] | 0.11 | 0.50 |
| PM | 0.006 lb/ODT | Based on stack test results[3] | 0.13 | 0.58 |
| VOC Total | 0.35 lb/ODT | Based on stack test results[4] | 8.84 | 38.72 |
| Methanol | 0.0017 lb/ODT | Based on stack test results[2] | 0.04 | 0.186 |
| Formaldehyde | 0.0032 lb/ODT | Based on stack test results[2] | 0.08 | 0.358 |
| Acetaldehyde | 0.0017 lb/ODT | Based on stack test results[2] | *0.04* | *0.186* |

REFERENCE/NOTES

1. Based on production information provided Josh Jones (Drax Biomass) to Sharon Killian (Trinity) on February 16, 2022 via email.

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016.

3. PM emission rates calculated based on March 2019 engineering testing of the hammermills at a sister facility (Drax Morehouse BioEnergy) with an additional 25% safety factor.

PM $ER_{ann}$ (tons/yr) = (PM $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC emission rates calculated based on November 2018 engineering testing of the secondary hammermills at the site with an additional 25% safety factor.

VOC $ER_{ann}$ (tons/yr) = (VOC $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

5. TAP ER calculated as follows:

$TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)

$TAP_{avg}$ (lb/hr) = (VOC/$TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Secondary Hammermill Pneumatic Sysem No. 3 ***(INCLUDED FOR COMPLETENESS ONLY, EMISSIONS ACCOUNTED UNDER RCO)*** | SHPS3 | AA-307c |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 9,000 | acfm |
| Average Annual throughput[1] | 64,228 | ODT/yr |
| Maximum Annual throughput[1] | 208,233 | ODT*/yr |
| Maximum hourly throughput[1] | 23.77 | ODT*/hr |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[5] PTE (lb/hr) | Emission Rates[5] Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.005 lb/ODT | Based on stack test results[3] | 0.11 | 0.50 |
| PM | 0.006 lb/ODT | Based on stack test results[3] | 0.13 | 0.58 |
| VOC Total | 0.35 lb/ODT | Based on stack test results[4] | 8.84 | 38.72 |
| Methanol | 0.0017 lb/ODT | Based on stack test results[2] | 0.04 | 0.186 |
| Formaldehyde | 0.0032 lb/ODT | Based on stack test results[2] | 0.08 | 0.358 |
| Acetaldehyde | 0.0017 lb/ODT | Based on stack test results[2] | *0.04* | *0.186* |

REFERENCE/NOTES

1. Based on production information provided Josh Jones (Drax Biomass) to Sharon Killian (Trinity) on February 16, 2022 via email.

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016.

3. PM emission rates calculated based on March 2019 engineering testing of the hammermills at a sister facility (Drax Morehouse BioEnergy) with an additional 25% safety factor.

$PM\ ER_{ann}$ (tons/yr) = ($PM\ ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC emission rates calculated based on November 2018 engineering testing of the secondary hammermills at the site with an additional 25% safety factor.

$VOC\ ER_{ann}$ (tons/yr) = ($VOC\ ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

5. TAP ER calculated as follows:

$TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)

$TAP_{avg}$ (lb/hr) = ($VOC/TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Pellet Cooler Pneumatic System No.1 ***(INCLUDED FOR COMPLETENESS ONLY, EMISSIONS ACCOUNTED UNDER RCO)*** | PC1 | AA-308A |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 17,887 | acfm |
| Annual throughput through source[1] | 104,117 | ODT*/yr |
| Potential maximum hourly throughput[1] | 11.89 | ODT*/hr |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[5] PTE (lb/hr) | Emission Rates[5] Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.016 lb/ODT | Based on scaled up stack test results[3] | 0.20 | 0.88 |
| PM | 0.02 lb/ODT | Based on scaled up stack test results[3] | 0.25 | 1.11 |
| VOC Total | 1.79 lb/ODT | Based on scaled up stack test results[4] | 21.26 | 93.13 |
| Methanol | 0.0020 lb/ODT | Based on scaled up stack test results[2] | 0.02 | 0.10 |
| Formaldehyde | 0.0040 lb/ODT | Based on scaled up stack test results[2] | 0.05 | 0.21 |
| Acetaldehyde | 0.0020 lb/ODT | Based on scaled up stack test results[2] | 0.02 | 0.10 |

REFERENCE/NOTES

1. Based on production information provided by Josh Jones (Drax Biomass) to Sharon Killian (Trinity) via email on February 16, 2021. It is assumed that there will be equal distribution of throughput to the 6 exisitng pellet coolers (1 for every 2 pellet mills).

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016. These emissions have been scaled up to account for a 25% safety factor.

3. PM emission rates calculated based on March 2019 engineering testing of the pellet coolers at a sister facility (Drax Morehouse BioEnergy) adjusted for the change in production and number of pellet coolers with an additional 25% safety factor.

PM $ER_{ann}$ (tons/yr) = (PM $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC emission rates calculated based on November 2018 engineering testing of the pellet coolers at the site adjusted for the change in production and number of pellet coolers with an additional 25% safety factor. The average of the stack test results for each cooler was used to estimate the emissions.

VOC $ER_{ann}$ (tons/yr) = (VOC $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

5. TAP ER calculated as follows:

$TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)

$TAP_{avg}$ (lb/hr) = (VOC/$TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Pellet Cooler Pneumatic System No.2 ***(INCLUDED FOR COMPLETENESS ONLY, EMISSIONS ACCOUNTED UNDER RCO)*** | PC2 | AA-308B |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 17,887 | acfm |
| Annual throughput through source[1] | 104,117 | ODT*/yr |
| Potential maximum hourly throughput[1] | 11.89 | ODT*/hr |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[5] PTE (lb/hr) | Emission Rates[5] Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.016 lb/ODT | Based on scaled up stack test results[3] | *0.20* | *0.88* |
| PM | 0.02 lb/ODT | Based on scaled up stack test results[3] | *0.25* | *1.11* |
| VOC Total | 1.79 lb/ODT | Based on scaled up stack test results[4] | 21.26 | 93.13 |
| Methanol | 0.0020 lb/ODT | Based on scaled up stack test results[2] | 0.02 | 0.10 |
| Formaldehyde | 0.0040 lb/ODT | Based on scaled up stack test results[2] | 0.05 | 0.21 |
| Acetaldehyde | 0.0020 lb/ODT | Based on scaled up stack test results[2] | 0.02 | 0.10 |

REFERENCE/NOTES

1. Based on production information provided by Josh Jones (Drax Biomass) to Sharon Killian (Trinity) via email on February 16, 2021. It is assumed that there will be equal distribution of throughput to the 6 exisitng pellet coolers (1 for every 2 pellet mills).

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016. These emissions have been scaled up to account for a 25% safety factor.

3. PM emission rates calculated based on March 2019 engineering testing of the pellet coolers at a sister facility (Drax Morehouse BioEnergy) adjusted for the change in production and number of pellet coolers with an additional 25% safety factor.

$PM\ ER_{ann}$ (tons/yr) = ($PM\ ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC emission rates calculated based on November 2018 engineering testing of the pellet coolers at the site adjusted for the change in production and number of pellet coolers with an additional 25% safety factor. The average of the stack test results for each cooler was used to estimate the emissions.

$VOC\ ER_{ann}$ (tons/yr) = ($VOC\ ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

5. TAP ER calculated as follows:

$TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)

$TAP_{avg}$ (lb/hr) = ($VOC/TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Pellet Cooler Pneumatic System No.3 ***(INCLUDED FOR COMPLETENESS ONLY, EMISSIONS ACCOUNTED UNDER RCO)*** | PC3 | AA-308C |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 17,887 | acfm |
| Annual throughput through source[1] | 104,117 | ODT*/yr |
| Potential maximum hourly throughput[1] | 11.89 | ODT*/hr |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[5] PTE (lb/hr) | Emission Rates[5] Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.016 lb/ODT | Based on scaled up stack test results[3] | *0.20* | *0.88* |
| PM | 0.02 lb/ODT | Based on scaled up stack test results[3] | *0.25* | *1.11* |
| VOC Total | 1.79 lb/ODT | Based on scaled up stack test results[4] | 21.26 | 93.13 |
| Methanol | 0.0020 lb/ODT | Based on scaled up stack test results[2] | 0.02 | 0.10 |
| Formaldehyde | 0.0040 lb/ODT | Based on scaled up stack test results[2] | 0.05 | 0.21 |
| Acetaldehyde | 0.0020 lb/ODT | Based on scaled up stack test results[2] | 0.02 | 0.10 |

REFERENCE/NOTES

1. Based on production information provided by Josh Jones (Drax Biomass) to Sharon Killian (Trinity) via email on February 16, 2021. It is assumed that there will be equal distribution of throughput to the 6 exisitng pellet coolers (1 for every 2 pellet mills).

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016. These emissions have been scaled up to account for a 25% safety factor.

3. PM emission rates calculated based on March 2019 engineering testing of the pellet coolers at a sister facility (Drax Morehouse BioEnergy) adjusted for the change in production and number of pellet coolers with an additional 25% safety factor.

$PM\ ER_{ann}$ (tons/yr) = ($PM\ ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC emission rates calculated based on November 2018 engineering testing of the pellet coolers at the site adjusted for the change in production and number of pellet coolers with an additional 25% safety factor. The average of the stack test results for each cooler was used to estimate the emissions.

$VOC\ ER_{ann}$ (tons/yr) = ($VOC\ ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

5. TAP ER calculated as follows:

$TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)

$TAP_{avg}$ (lb/hr) = ($VOC/TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Pellet Cooler Pneumatic System No.4 ***(INCLUDED FOR COMPLETENESS ONLY, EMISSIONS ACCOUNTED UNDER RCO)*** | PC4 | AA-308D |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 17,887 | acfm |
| Annual throughput through source[1] | 104,117 | ODT*/yr |
| Potential maximum hourly throughput[1] | 11.89 | ODT*/hr |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[5] PTE (lb/hr) | Emission Rates[5] Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.016 lb/ODT | Based on scaled up stack test results[3] | *0.20* | *0.88* |
| PM | 0.02 lb/ODT | Based on scaled up stack test results[3] | *0.25* | *1.11* |
| VOC Total | 1.79 lb/ODT | Based on scaled up stack test results[4] | 21.26 | 93.13 |
| Methanol | 0.0020 lb/ODT | Based on scaled up stack test results[2] | 0.02 | 0.10 |
| Formaldehyde | 0.0040 lb/ODT | Based on scaled up stack test results[2] | 0.05 | 0.21 |
| Acetaldehyde | 0.0020 lb/ODT | Based on scaled up stack test results[2] | 0.02 | 0.10 |

REFERENCE/NOTES

1. Based on production information provided by Josh Jones (Drax Biomass) to Sharon Killian (Trinity) via email on February 16, 2021. It is assumed that there will be equal distribution of throughput to the 6 exisitng pellet coolers (1 for every 2 pellet mills).

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016. These emissions have been scaled up to account for a 25% safety factor.

3. PM emission rates calculated based on March 2019 engineering testing of the pellet coolers at a sister facility (Drax Morehouse BioEnergy) adjusted for the change in production and number of pellet coolers with an additional 25% safety factor.

PM $ER_{ann}$ (tons/yr) = (PM $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC emission rates calculated based on November 2018 engineering testing of the pellet coolers at the site adjusted for the change in production and number of pellet coolers with an additional 25% safety factor. The average of the stack test results for each cooler was used to estimate the emissions.

VOC $ER_{ann}$ (tons/yr) = (VOC $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

5. TAP ER calculated as follows:

$TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)

$TAP_{avg}$ (lb/hr) = (VOC/$TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Pellet Cooler Pneumatic System No.5 ***(INCLUDED FOR COMPLETENESS ONLY, EMISSIONS ACCOUNTED UNDER RCO)*** | PC5 | AA-308E |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 17,887 | acfm |
| Annual throughput through source[1] | 104,117 | ODT*/yr |
| Potential maximum hourly throughput[1] | 11.89 | ODT*/hr |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[5] PTE (lb/hr) | Emission Rates[5] Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.016 lb/ODT | Based on scaled up stack test results[3] | *0.20* | *0.88* |
| PM | 0.02 lb/ODT | Based on scaled up stack test results[3] | *0.25* | *1.11* |
| VOC Total | 1.79 lb/ODT | Based on scaled up stack test results[4] | 21.26 | 93.13 |
| Methanol | 0.0020 lb/ODT | Based on scaled up stack test results[2] | 0.02 | 0.10 |
| Formaldehyde | 0.0040 lb/ODT | Based on scaled up stack test results[2] | 0.05 | 0.21 |
| Acetaldehyde | 0.0020 lb/ODT | Based on scaled up stack test results[2] | 0.02 | 0.10 |

REFERENCE/NOTES

1. Based on production information provided by Josh Jones (Drax Biomass) to Sharon Killian (Trinity) via email on February 16, 2021. It is assumed that there will be equal distribution of throughput to the 6 exisitng pellet coolers (1 for every 2 pellet mills).

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016. These emissions have been scaled up to account for a 25% safety factor.

3. PM emission rates calculated based on March 2019 engineering testing of the pellet coolers at a sister facility (Drax Morehouse BioEnergy) adjusted for the change in production and number of pellet coolers with an additional 25% safety factor.

PM $ER_{ann}$ (tons/yr) = (PM $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC emission rates calculated based on November 2018 engineering testing of the pellet coolers at the site adjusted for the change in production and number of pellet coolers with an additional 25% safety factor. The average of the stack test results for each cooler was used to estimate the emissions.

VOC $ER_{ann}$ (tons/yr) = (VOC $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

5. TAP ER calculated as follows:

$TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)

$TAP_{avg}$ (lb/hr) = (VOC/$TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Pellet Cooler Pneumatic System No.6 ***(INCLUDED FOR COMPLETENESS ONLY, EMISSIONS ACCOUNTED UNDER RCO)*** | PC6 | AA-308F |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 17,887 | acfm |
| Annual throughput through source[1] | 104,117 | ODT*/yr |
| Potential maximum hourly throughput[1] | 11.89 | ODT*/hr |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[5] PTE (lb/hr) | Emission Rates[5] Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.016 lb/ODT | Based on scaled up stack test results[3] | *0.20* | *0.88* |
| PM | 0.02 lb/ODT | Based on scaled up stack test results[3] | *0.25* | *1.11* |
| VOC Total | 1.79 lb/ODT | Based on scaled up stack test results[4] | 21.26 | 93.13 |
| Methanol | 0.0020 lb/ODT | Based on scaled up stack test results[2] | 0.02 | 0.10 |
| Formaldehyde | 0.0040 lb/ODT | Based on scaled up stack test results[2] | 0.05 | 0.21 |
| Acetaldehyde | 0.0020 lb/ODT | Based on scaled up stack test results[2] | 0.02 | 0.10 |

REFERENCE/NOTES

1. Based on production information provided by Josh Jones (Drax Biomass) to Sharon Killian (Trinity) via email on February 16, 2021. It is assumed that there will be equal distribution of throughput to the 6 exisitng pellet coolers (1 for every 2 pellet mills).

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016. These emissions have been scaled up to account for a 25% safety factor.

3. PM emission rates calculated based on March 2019 engineering testing of the pellet coolers at a sister facility (Drax Morehouse BioEnergy) adjusted for the change in production and number of pellet coolers with an additional 25% safety factor.

PM $ER_{ann}$ (tons/yr) = (PM $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC emission rates calculated based on November 2018 engineering testing of the pellet coolers at the site adjusted for the change in production and number of pellet coolers with an additional 25% safety factor. The average of the stack test results for each cooler was used to estimate the emissions.

VOC $ER_{ann}$ (tons/yr) = (VOC $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

5. TAP ER calculated as follows:

$TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)

$TAP_{avg}$ (lb/hr) = (VOC/$TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emission Point ID |
| Pellet Coolers, Pellet Mills, Secondary Hammermills, and RCO Burner | RCO | AA-301 |

1. The RCO stack will exhaust controlled process VOC emissions from the 6 dry hammermills, 3 secondary hammermills, and 6 pellet coolers.

2. Combustion emissions from the RCO's gas burner will also exhaust out of the RCO stack.

3. Individual emissions from the hammermills and pellet coolers have been included in later spreadsheet tabs for completeness only.

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emission Point ID |
| Pellet Coolers, Pellet Mills, Secondary Hammermills, and RCO Burner | RCO | AA-301 |

The RCO stack will exhaust controlled process VOC emissions from the dry primary hammermills, secondary hammermills, and pellet coolers Combustion emissions from the RCO's gas burner will also exhaust out of the RCO stack.

| Operating Data | | |
|---|---|---|
| Facility Capacity[1] | 624,700 | ODT*/yr |
| Hourly Throughput | 71.31 | ODT*/hr |
| RCO VOC Control Efficiency | 95 | % |
| RCO HAP Control Efficiency | 50 | % |
| Operating hours[1] | 8,760 | hrs/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates PTE (lb/hr) | Emission Rates Annual (tons/yr) |
|---|---|---|---|---|
| *Criteria Pollutants* | | | | |
| $PM_{2.5}$ | 0.0132 lb/ODT | July 2021 Performance Test Data | 0.94 | 4.12 |
| PM | 0.0213 lb/ODT | July 2021 Performance Test Data | 1.52 | 6.65 |
| SO | 0.0001 lb/ODT | | 0.01 | 0.031 |
| NOx | 0.0130 lb/ODT | July 2021 Performance Test Data | 0.93 | 4.06 |
| CO | 0.1728 lb/ODT | July 2021 Performance Test Data | 12.32 | 53.97 |
| VOC Total | 0.1203 lb/ODT | July 2021 Performance Test Data | 8.58 | 37.58 |
| *Hazardous/Toxic Air Pollutants* | | | | |
| Methanol | 0.0410 lb/ODT | July 2021 Performance Test Data | 2.924 | 12.806 |
| Formaldehyde | 0.0035 lb/ODT | July 2021 Performance Test Data | 0.250 | 1.093 |
| Acetaldehyde | 0.0037 lb/ODT | July 2021 Performance Test Data | 0.264 | 1.156 |
| 2-Methylnaphthalene | 2.40E-05 $lb/10^6$ scf | See Note 4 | 1.65E-07 | 7.21E-07 |
| 3-Methylchloranthene | 1.80E-06 $lb/10^6$ scf | See Note 4 | 1.24E-08 | 5.41E-08 |
| 7,12-Dimethylbenz(a)anthracene | 1.60E-05 $lb/10^6$ scf | See Note 4 | 1.10E-07 | 4.81E-07 |
| Acenaphthene | 1.80E-06 $lb/10^6$ scf | See Note 4 | 1.24E-08 | 5.41E-08 |
| Acenaphthylene | 1.80E-06 $lb/10^6$ scf | See Note 4 | 1.24E-08 | 5.41E-08 |
| Acrolein | 0.0014 lb/ODT | July 2021 Performance Test Data | 0.100 | 0.437 |
| Anthracene | 2.40E-06 $lb/10^6$ scf | See Note 4 | 1.65E-08 | 7.21E-08 |
| Arsenic | 2.00E-04 $lb/10^6$ scf | See Note 4 | 2.75E-06 | 1.20E-05 |
| Benz(a)anthracene | 1.80E-06 $lb/10^6$ scf | See Note 4 | 1.24E-08 | 5.41E-08 |
| Benzene | 2.10E-03 $lb/10^6$ scf | See Note 4 | 1.44E-05 | 6.31E-05 |
| Benzo(a)pyrene | 1.20E-06 $lb/10^6$ scf | See Note 4 | 8.24E-09 | 3.61E-08 |
| Benzo(b)fluoranthene | 1.80E-06 $lb/10^6$ scf | See Note 4 | 1.24E-08 | 5.41E-08 |
| Benzo(g,h,i)perylene | 1.20E-06 $lb/10^6$ scf | See Note 4 | 8.24E-09 | 3.61E-08 |
| Benzo(k)fluoranthene | 1.80E-06 $lb/10^6$ scf | See Note 4 | 1.24E-08 | 5.41E-08 |
| Beryllium | 1.20E-05 $lb/10^6$ scf | See Note 4 | 1.65E-07 | 7.21E-07 |
| Cadmium | 1.10E-03 $lb/10^6$ scf | See Note 4 | 1.51E-05 | 6.61E-05 |
| Chromium VI | 1.40E-03 $lb/10^6$ scf | See Note 4 | 1.92E-05 | 8.42E-05 |
| Chrysene | 1.80E-06 $lb/10^6$ scf | See Note 4 | 1.24E-08 | 5.41E-08 |
| Cobalt | 8.40E-05 $lb/10^6$ scf | See Note 4 | 1.15E-06 | 5.05E-06 |
| Dibenzo(a,h)anthracene | 1.20E-06 $lb/10^6$ scf | See Note 4 | 8.24E-09 | 3.61E-08 |
| Dichlorobenzene | 1.20E-03 $lb/10^6$ scf | See Note 4 | 8.24E-06 | 3.61E-05 |
| Fluoranthene | 3.00E-06 $lb/10^6$ scf | See Note 4 | 2.06E-08 | 9.02E-08 |
| Indeno(1,2,3-cd)pyrene | 2.80E-06 $lb/10^6$ scf | See Note 4 | 1.92E-08 | 8.42E-08 |
| Lead | 1.80E-06 $lb/10^6$ scf | See Note 4 | 2.47E-08 | 1.08E-07 |
| Manganese | 3.80E-04 $lb/10^6$ scf | See Note 4 | 5.22E-06 | 2.28E-05 |
| Mercury | 2.60E-04 $lb/10^6$ scf | See Note 4 | 3.57E-06 | 1.56E-05 |
| Naphthalene | 6.10E-04 $lb/10^6$ scf | See Note 4 | 4.19E-06 | 1.83E-05 |
| Nickel | 2.10E-03 $lb/10^6$ scf | See Note 4 | 2.88E-05 | 1.26E-04 |

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emission Point ID |
| Pellet Coolers, Pellet Mills, Secondary Hammermills, and RCO Burner | RCO | AA-301 |

The RCO stack will exhaust controlled process VOC emissions from the dry primary hammermills, secondary hammermills, and pellet coolers Combustion emissions from the RCO's gas burner will also exhaust out of the RCO stack.

| Operating Data | | |
|---|---|---|
| Facility Capacity[1] | 624,700 | ODT*/yr |
| Hourly Throughput | 71.31 | ODT*/hr |
| RCO VOC Control Efficiency | 95 | % |
| RCO HAP Control Efficiency | 50 | % |
| Operating hours[1] | 8,760 | hrs/yr |

*ODT = oven dried ton (U.S.) of chips

| *Hazardous/Toxic Air Pollutants* | | | | | |
|---|---|---|---|---|---|
| Phenanathrene | 1.70E-05 | lb/$10^6$ scf | See Note 4 | 1.17E-07 | 5.11E-07 |
| Pyrene | 5.00E-06 | lb/$10^6$ scf | See Note 4 | 3.43E-08 | 1.50E-07 |
| Selenium | 2.40E-05 | lb/$10^6$ scf | See Note 4 | 3.29E-07 | 1.44E-06 |
| Toluene | 3.40E-03 | lb/$10^6$ scf | See Note 4 | 2.33E-05 | 1.02E-04 |
| n-Hexane | 1.80 | lb/$10^6$ scf | See Note 4 | 1.24E-02 | 5.41E-02 |
| Propionaldehyde | 0.0034 | lb/ODT | July 2021 Performance Test Data | 0.242 | 1.062 |
| Hydrogen Chloride | 0.0008 | lb/ODT | July 2021 Performance Test Data | 0.057 | 0.250 |
| Phenol | 0.0222 | lb/ODT | July 2021 Performance Test Data | 1.583 | 6.934 |
| | | | **Total HAP Emissions (RCO Stack)** | **3.55** | **15.55** |
| *Greenhouse Gas Emissions* | | | | | |
| CO e | - | | See Note 4 | - | 7182 |

REFERENCE/NOTES

1. Based on information provided by Josh Jones (Drax Biomass) to Sharon Killian (Trinity) via email on February 16, 2022.

2. $PM_{10/2.5}$, VOC, and Formaldehyde lb/hr emissions are the sum of the following individual components: 6 Primary Hammermills, 6 Pellet Coolers, 3 Seconadry Hammermills, and RCO Burner. For the tpy emissions, the combination of the primary hammermills and secondary hammermills is such that the total will not exceed production of 660,000 U.S. tons. VOC emissions also include 95% RCO control efficiency, and HAP emissions include 50% RCO control efficiency. The effective emission factor (lb/ODT) is based on the the overall stream from various sources to the RCO post-control.

3. Methanol and Acetaldehyde lb/hr emissions are the sum of the following individual components: 6 Primary Hammermills, 6 Pellet Coolers, and 3Secondary Hammermills. For the tpy emissions, the combination of the primary hammermills and secondary hammermills is such that the total will not exceed production of 660,000 U.S. tons. HAP emissions include 50% RCO control efficiency.

4. $SO_2$, $NO_x$, CO, GHG emissions and all other HAP emissions are only associated with the RCO burner emissions.

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | EMISSION POINT ID | TEMPO ID |
| RCO Burner Emissions ***(INCLUDED FOR COMPLETENESS ONLY)*** | RCO | AA-301 |

| Operating Data | | |
|---|---|---|
| RCO burner capacity[1] | 14 | MMBtu/hr |
| Natural gas HHV[2] | 1,020 | Btu/scf |
| Operating hours[1] | 8,760 | hrs/yr |

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[3] PTE (lb/hr) | Emission Rates[3] Annual (tons/yr) |
|---|---|---|---|---|
| *Criteria Pollutants* | | | | |
| $PM_{2.5}$ | 7.6 lb/$10^6$ scf | AP 42; Table 1.4-2 | *0.10* | *0.46* |
| PM | 7.6 lb/$10^6$ scf | AP 42; Table 1.4-2 | *0.10* | *0.46* |
| SO | 0.6 lb/$10^6$ scf | AP 42; Table 1.4-2 | *0.01* | *0.04* |
| NOx | 100 lb/$10^6$ scf | AP 42; Table 1.4-1 | *1.37* | *6.01* |
| CO | 84 lb/$10^6$ scf | AP 42; Table 1.4-1 | *1.15* | *5.05* |
| VOC Total | 5.5 lb/$10^6$ scf | AP 42; Table 1.4-2 | *0.08* | *0.33* |
| *Hazardous/Toxic Air Pollutants* | | | | |
| Formaldehyde | 0.075 lb/$10^6$ scf | AP 42; Table 1.4-3 | *0.001* | *0.005* |
| 2-Methylnaphthalene | 2.40E-05 lb/$10^6$ scf | AP 42; Table 1.4-3 | *3.29E-07* | *1.44E-06* |
| 3-Methylchloranthene | 1.80E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *2.47E-08* | *1.08E-07* |
| 7,12-Dimethylbenz(a)anthracene | 1.60E-05 lb/$10^6$ scf | AP 42; Table 1.4-3 | *2.20E-07* | *9.62E-07* |
| Acenaphthene | 1.80E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *2.47E-08* | *1.08E-07* |
| Acenaphthylene | 1.80E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *2.47E-08* | *1.08E-07* |
| Acrolein | 1.80E-05 lb/$10^6$ scf | AP 42; Table 1.4-3 | *2.47E-07* | *1.08E-06* |
| Anthracene | 2.40E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *3.29E-08* | *1.44E-07* |
| Arsenic | 2.00E-04 lb/$10^6$ scf | AP 42; Table 1.4-3 | *2.75E-06* | *1.20E-05* |
| Benz(a)anthracene | 1.80E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *2.47E-08* | *1.08E-07* |
| Benzene | 2.10E-03 lb/$10^6$ scf | AP 42; Table 1.4-3 | *2.88E-05* | *1.26E-04* |
| Benzo(a)pyrene | 1.20E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *1.65E-08* | *7.21E-08* |
| Benzo(b)fluoranthene | 1.80E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *2.47E-08* | *1.08E-07* |
| Benzo(g,h,i)perylene | 1.20E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *1.65E-08* | *7.21E-08* |
| Benzo(k)fluoranthene | 1.80E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *2.47E-08* | *1.08E-07* |
| Beryllium | 1.20E-05 lb/$10^6$ scf | AP 42; Table 1.4-3 | *1.65E-07* | *7.21E-07* |
| Cadmium | 1.10E-03 lb/$10^6$ scf | AP 42; Table 1.4-3 | *1.51E-05* | *6.61E-05* |
| Chromium VI | 1.40E-03 lb/$10^6$ scf | AP 42; Table 1.4-3 | *1.92E-05* | *8.42E-05* |
| Chrysene | 1.80E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *2.47E-08* | *1.08E-07* |
| Cobalt | 8.40E-05 lb/$10^6$ scf | AP 42; Table 1.4-3 | *1.15E-06* | *5.05E-06* |
| Dibenzo(a,h)anthracene | 1.20E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *1.65E-08* | *7.21E-08* |
| Dichlorobenzene | 1.20E-03 lb/$10^6$ scf | AP 42; Table 1.4-3 | *1.65E-05* | *7.21E-05* |
| Fluoranthene | 3.00E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *4.12E-08* | *1.80E-07* |
| Indeno(1,2,3-cd)pyrene | 2.80E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *3.84E-08* | *1.68E-07* |
| Lead | 1.80E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *2.47E-08* | *1.08E-07* |
| Manganese | 3.80E-04 lb/$10^6$ scf | AP 42; Table 1.4-3 | *5.22E-06* | *2.28E-05* |
| Mercury | 2.60E-04 lb/$10^6$ scf | AP 42; Table 1.4-3 | *3.57E-06* | *1.56E-05* |
| Naphthalene | 6.10E-04 lb/$10^6$ scf | AP 42; Table 1.4-3 | *8.37E-06* | *3.67E-05* |
| Nickel | 2.10E-03 lb/$10^6$ scf | AP 42; Table 1.4-3 | *2.88E-05* | *1.26E-04* |
| Phenanathrene | 1.70E-05 lb/$10^6$ scf | AP 42; Table 1.4-3 | *2.33E-07* | *1.02E-06* |
| Pyrene | 5.00E-06 lb/$10^6$ scf | AP 42; Table 1.4-3 | *6.86E-08* | *3.01E-07* |
| Selenium | 2.40E-05 lb/$10^6$ scf | AP 42; Table 1.4-3 | *3.29E-07* | *1.44E-06* |
| Toluene | 3.40E-03 lb/$10^6$ scf | AP 42; Table 1.4-3 | *4.67E-05* | *2.04E-04* |
| n-Hexane | 1.8 lb/$10^6$ scf | AP 42; Table 1.4-3 | *0.02* | *0.11* |
| | | **Total HAP Emissions (NG Combustion)** | ***0.03*** | ***0.11*** |

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | EMISSION POINT ID | TEMPO ID |
| RCO Burner Emissions ***(INCLUDED FOR COMPLETENESS ONLY)*** | RCO | AA-301 |

| Operating Data | | |
|---|---|---|
| RCO burner capacity[1] | 14 | MMBtu/hr |
| Natural gas HHV[2] | 1,020 | Btu/scf |
| Operating hours[1] | 8,760 | hrs/yr |

*Greenhouse Gases*

| Pollutant | Emission Factor[4] | GHG Mass Emission Rates[5] Annual (tons/yr) | GWP[6] | $CO_2e$ Annual (tons/yr) |
|---|---|---|---|---|
| $CO_2$ | 53.06 kg/MMBtu | 7174.27 | 1 | *7,174* |
| $CH_4$ | 0.001 kg/MMBtu | 0.14 | 25 | *3.380* |
| $N_2O$ | 0.0001 kg/MMBtu | 0.01 | 298 | *4.03* |
| CO e | | | | *7,182* |

REFERENCE/NOTES

1. Based on information provided by Josh Jones (Drax Biomass) to Sharon Killian (Trinity) via email on February 16, 2022.
2. AP-42; Chapter 1.4 - Natural Gas Combustion.
3. $ER_{avg/max}$ (lb/hr) = Furnace capacity (MMBtu/hr) x (EF (lb/$10^6$ scf)/HHV (Btu/scf))
   $ER_{ann}$ (tons/yr) = ($ER_{avg}$ (lbs/hr) x Operating Time (hrs))/2000 lbs/ton
4. Emission factor based on 40 CFR 98, Tables C-1 and C-2, for Petroleum (Natural Gas).
5. Emission rates (ER) calculated as specified in 40 CFR 98.33(a)(1)(iii) and 40 CFR 98.33(c)(1)(ii) and in accordance with 98.33(b)(1)(v) as follows:
   GHG: ER (tons/yr) = (Total) Firing Rate (MMBtu/hr) x (Emission Factor (kg/$10^6$ Btu) x 1000 g/kg / 453.59 g/lb) x Operating Hours (hr/yr) / 2000 lbs/ton
   $CO_2e$: ER (tons/yr) = GHG Mass Emission Rate x GWP
6. GWPs based on 40 CFR 98, Table A-1.

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Starch Storage Silo, Bin Vent | SS | AA-309 |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 50 | $m^3$/hr |
| Particulate Content[1] | 0.5 | $mg/m^3$ |
| Operating hours[1] | 8,760 | hr/yr |

| *Emission Totals:* | | |
|---|---|---|
| Pollutant | Emission Rates PTE (lb/hr) | Annual (tons/yr) |
| $PM_{2.5}$ | 0.0001 | 0.0002 |
| PM | 0.0001 | 0.0002 |

REFERENCE/NOTES

1. Estimated based on sizing at a sister facility (Drax Morehouse BioEnergy).
2. PM Emission rates (ER) calculated as follows:

   PM $ER_{avg/max}$ (lb/hr) = (Exhaust Flow ($m^3$/hr) x Particulate Content ($mg/m^3$)) / (1000 (mg/g) / 453.59 (g/lb))

   PM $ER_{ann}$ (tons/yr) = (PM $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Pellet Storage Silo No. 1 with Bin Vent | PS1 | AA-401A |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 300 | acfm |
| Annual throughput through source[1] | 312,350 | ODT*/yr |
| Potential maximum hourly throughput[1] | 35.66 | ODT*/hr |
| Exhaust temperature[1] | 77 | °F |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates PTE (lb/hr) | Emission Rates Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.015 gr/scf | Vendor guarantee | 0.04 | 0.17 |
| PM | 0.015 gr/scf | Vendor guarantee | 0.04 | 0.17 |
| VOC Total | 0.0279 lb/ODT | Based on stack test results[2] | 1.00 | 4.36 |
| Methanol | 0.0014 lb/ODT | Based on stack test results[2] | 0.05 | 0.22 |
| Formaldehyde | 0.0027 lb/ODT | Based on stack test results[2] | 0.09 | 0.41 |
| Acetaldehyde | 0.0014 lb/ODT | Based on stack test results[2] | 0.05 | 0.22 |

REFERENCE/NOTES

1. Based on information provided by Josh Jones (Drax Biomass) to Sharon Killian (Trinity) via email on February 16, 2021.

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016. These emissions have been scaled up to account for a 25% safety factor.

3. PM Emission rates (ER) calculated as follows:
   PM $ER_{avg/max}$ (lb/hr) = ((EF (gr/scf) x Exhaust Flow (acfm)) x (60 min/hr) x (1 lb/7000 gr) x (Standard Temp (°R )/Actual Temp (°R ))
   PM $ER_{ann}$ (tons/yr) = (PM $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC/TAP ER calculated as follows:
   $VOC/TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)
   $VOC/TAP_{avg}$ (lb/hr) = ($VOC/TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)
   $VOC/TAP_{max}$ (lb/hr) = Potential max hourly throughput (ODT/hr) x EF (lb/ODT)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Pellet Storage Silo No. 2 with Bin Vent | PS2 | AA-401B |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 300 | acfm |
| Annual throughput through source[1] | 312,350 | ODT*/yr |
| Potential maximum hourly throughput[1] | 35.66 | ODT*/hr |
| Exhaust temperature[1] | 77 | °F |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates PTE (lb/hr) | Emission Rates Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.015 gr/scf | Vendor guarantee | 0.04 | 0.17 |
| PM | 0.015 gr/scf | Vendor guarantee | 0.04 | 0.17 |
| VOC Total | 0.0279 lb/ODT | Based on stack test results[2] | 1.00 | 4.36 |
| Methanol | 0.0014 lb/ODT | Based on stack test results[2] | 0.05 | 0.22 |
| Formaldehyde | 0.0027 lb/ODT | Based on stack test results[2] | 0.09 | 0.41 |
| Acetaldehyde | 0.0014 lb/ODT | Based on stack test results[2] | 0.05 | 0.22 |

REFERENCE/NOTES

1. Based on information provided by Jamaria Warren (Drax Biomass) to Sharon Killian (Trinity) via email on August 23,2021.

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016. These emissions have been scaled up to account for a 25% safety factor.

3. PM Emission rates (ER) calculated as follows:
   PM $ER_{avg/max}$ (lb/hr) = ((EF (gr/scf) x Exhaust Flow (acfm)) x (60 min/hr) x (1 lb/7000 gr) x (Standard Temp (°R )/Actual Temp (°R ))
   PM $ER_{ann}$ (tons/yr) = (PM $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC/TAP ER calculated as follows:
   $VOC/TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)
   $VOC/TAP_{avg}$ (lb/hr) = ($VOC/TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)
   $VOC/TAP_{max}$ (lb/hr) = Potential max hourly throughput (ODT/hr) x EF (lb/ODT)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Screened Materials Return Systen | SMS | AA-401D |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 7,452 | acfm |
| Annual throughput through source[1] | 62,470 | ODT*/yr |
| Potential maximum hourly throughput[1] | 7.13 | ODT*/hr |
| Exhaust temperature[1] | 77 | °F |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates PTE (lb/hr) | Emission Rates Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.015 gr/scf | Vendor guarantee | 0.96 | 4.20 |
| PM | 0.015 gr/scf | Vendor guarantee | 0.96 | 4.20 |
| VOC Total | 0.0279 lb/ODT | Based on stack test results[2] | 0.20 | 0.87 |
| Methanol | 0.0014 lb/ODT | Based on stack test results[2] | 0.01 | 0.04 |
| Formaldehyde | 0.0027 lb/ODT | Based on stack test results[2] | 0.02 | 0.08 |
| Acetaldehyde | 0.0014 lb/ODT | Based on stack test results[2] | 0.01 | 0.04 |

REFERENCE/NOTES

1. It is assumed that 10% of material may be screened and returned to the process.Based on information provided by Jamaria Warren (Drax Biomass) to Sharon Killian (Trinity) via email on August 23,2021, it is assumed production capacity is 624,700 ODT/year based on an email from Josh Jones (Drax Biomass) to Sharon Killian on February 16, 2022.

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016. These emissions have been scaled up to account for a 25% safety factor.

3. PM Emission rates (ER) calculated as follows:
   PM $ER_{ann}$ (tons/yr) = (PM $ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC/TAP ER calculated as follows:
   $VOC/TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/yr) x EF (lb/ODT))/(1 ton/2000 lbs)
   $VOC/TAP_{avg}$ (lb/hr) = ($VOC/TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)
   $VOC/TAP_{max}$ (lb/hr) = Potential max hourly throughput (ODT/hr) x EF (lb/ODT)

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Pellet Truck Loadout System | PLS | AA-401E |

| Operating Data | | |
|---|---|---|
| Exhaust flow[1] | 13,000 | acfm |
| Annual throughput through source[1] | 624,700 | ODT*/yr |
| Potential maximum hourly throughput[1] | 71.31 | ODT*/hr |
| Exhaust temperature[1] | 77 | °F |
| Operating hours[1] | 8,760 | hr/yr |

*ODT = oven dried ton (U.S.) of chips

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates PTE (lb/hr) | Emission Rates Annual (tons/yr) |
|---|---|---|---|---|
| $PM_{2.5}$ | 0.0018 lb/ODT | Based on stack test results[3] | 0.13 | 0.55 |
| PM | 0.0024 lb/ODT | Based on stack test results[3] | 0.17 | 0.74 |
| VOC Total | 0.029 lb/ODT | Based on stack test results[5] | 2.21 | 9.67 |
| Methanol | 0.0014 lb/ODT | Based on stack test results[2] | 0.10 | 0.43 |
| Formaldehyde | 0.0027 lb/ODT | Based on stack test results[2] | 0.19 | 0.83 |
| Acetaldehyde | 0.0014 lb/ODT | Based on stack test results[2] | 0.10 | 0.43 |

REFERENCE/NOTES

1. Based on information provided by Josh Jones (Drax Biomass) to Sharon Killian (Trinity) via email on February 16, 2021.

2. Stack testing conducted at a sister facility (Drax Morehouse BioEnergy) on February 10-16, 2016. These emissions have been scaled up to account for a 25% safety factor.

3. PM emission rates calculated based on March 2019 engineering testing at a sister facility (Drax Morehouse BioEnergy) with scaled up operations and an additional 25% safety factor.

$PM\ ER_{ann}$ (tons/yr) = ($PM\ ER_{avg}$ (lbs/hr) x Operating hours) x (1 ton/2000 lbs)

4. VOC/TAP ER calculated as follows:

$VOC/TAP_{ann}$ (tons/yr) = (Annual throughput (ODT/hr) x EF (lb/ODT))/(1 ton/2000 lbs)

$VOC/TAP_{avg}$ (lb/hr) = ($VOC/TAP_{ann}$ (tons/yr) x (2000 lbs/ton))/Operating hours (hr/yr)

$VOC/TAP_{max}$ (lb/hr) = Potential max hourly throughput (ODT/hr) x EF (lb/ODT)

5. VOC emission rates calculated based on November 2018 engineering testing at the site. These emissions have been scaled up to account for a 25% safety factor. These emissions have been scaled up to account for the new production capacity (771,392 U.S. tons), and a 25% safety factor.

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Fire Pump Engine | FIR1 | AA-501 |

| Operating Data | | |
|---|---|---|
| Engine rating[1] | 250 | hp |
| Brake-Specific Fuel Consumption | 7,000 | Btu/hp-hr |
| Firing rate[2] | 1.75 | MMBtu/hr |
| Primary fuel[1] | #2 Diesel | |
| Operating hours[1] | 100 | hours |

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[3, 4, 5, 6] PTE (lb/hr) | Annual (tons/yr) |
|---|---|---|---|---|
| *Criteria Pollutants* | | | | |
| $PM_{2.5}$ | 0.15 g/BHP-hr | 40 CFR 60 Subpart IIII: Table 4 | 0.08 | 0.004 |
| PM | 0.15 g/BHP-hr | 40 CFR 60 Subpart IIII: Table 4 | 0.08 | 0.004 |
| SO | 0.00205 lb/hp-hr | AP-42, Table 3.3-1 (10/96) | 0.51 | 0.026 |
| NOx | 3.00 g/BHP-hr[4] | 40 CFR 60 Subpart IIII: Table 4 | 1.65 | 0.083 |
| CO | 0.00668 lb/hp-hr | AP-42, Table 3.3-1 (10/96) | 1.67 | 0.084 |
| VOC Total | 3.00 g/BHP-hr[4] | 40 CFR 60 Subpart IIII: Table 4 | 1.65 | 0.083 |
| *Hazardous/Toxic Air Pollutants* | | | | |
| Benzene | 9.33E-04 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.002 | 0.0001 |
| Toluene | 4.09E-04 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.001 | 0.00004 |
| Xylenes | 2.85E-04 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.0005 | 0.00002 |
| 1,3 - Butadiene | 3.91E-05 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.0001 | 0.000003 |
| Formaldehyde | 1.18E-03 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.002 | 0.0001 |
| Acetaldehyde | 7.67E-04 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.001 | 0.0001 |
| Acrolein | 9.25E-05 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.0002 | 0.00001 |
| Total PAH | 1.68E-04 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.0003 | 0.00001 |
| Naphthalene | 8.48E-05 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.0001 | 0.00001 |

*Greenhouse Gases*

| Pollutant | Emission Factor[7] | GHG Mass Emission Rates[8] Annual (tons/yr) | GWP[9] | $CO_2e$ Emission Annual (tons/yr) |
|---|---|---|---|---|
| $CO_2$ | 73.96 kg/MMBtu | 14.27 | 1 | 14 |
| $CH_4$ | 0.003 kg/MMBtu | 0.001 | 25 | 0.014 |
| $N_2O$ | 0.0006 kg/MMBtu | 0.0001 | 298 | 0.03 |
| CO e | | | | 15 |

REFERENCE/NOTES

1. Provided by facility.
2. Firing rate (MMBtu/hr) = (Heat Conversion Factor (Btu/hp-hr) x Operating Rate (hp))/1000000
3. Emission calculation for $PM_{2.5}$, $PM_{10}$, NOx, VOC.
   $ER_{avg/max}$ (lb/hr) = Engine rating (HP) x EF (g/hp-hr) x (1 lb/453.5924 g)
   $ER_{ann}$ (tons/yr) = ($ER_{avg}$ (lbs/hr) x Operating Time (hrs))/2000 lbs/ton
4. Per 40 CFR Subpart IIII, Table 4, NMHC + NOX emission standard is 3.0 g/hp-hr. For purposes of determining potential emissions of NOx and VOC, the combined emission standard for NMHC + NOx is used for each pollutant in the absence of separate emission standards for NOx and VOC. However, for purposes of demonstrating compliance with the applicable standard, the total emissions of NOx and VOC will be compared against the combined emission standard for HC + NOx.
5. Emission calculation for $SO_2$ and CO.
   ERavg/max (lbs/hr) = Engine rating (hp) x EFavg/max (lbs/hp-hr)
   $ER_{ann}$ (tons/yr) = ($ER_{avg}$ (lbs/hr) x Operating Time (hrs))/2000 lbs/ton
6. Emission calculation for HAPs.
   ERavg/max (lbs/hr) = Firing rate (MMBtu/hr) x EFavg/max (lb/MMBtu)
   $ER_{ann}$ (tons/yr) = ($ER_{avg}$ (lbs/hr) x Operating Time (hrs))/2000 lbs/ton
7. Emission factor based on 40 CFR 98, Tables C-1 and C-2, for Petroleum (Distillate Fuel Oil No.2).
8. Emission rates (ER) calculated as specified in 40 CFR 98.33(a)(1)(iii) and 40 CFR 98.33(c)(1)(ii) and in accordance with
   GHG: ER (tons/yr) = (Total) Firing Rate (MMBtu/hr) x (Emission Factor (kg/106 Btu) x 1000 g/kg / 453.59 g/lb) x Operating Hours (h
   $CO_2e$: ER (tons/yr) = GHG Mass Emission Rate * GWP
9. GWPs based on 40 CFR 98, Table A-1.

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emissions Point ID |
| Emergency Generator | EGN1 | AA-502 |

| Operating Data | | |
|---|---|---|
| Engine rating[1] | 402 | hp |
| Brake-Specific Fuel Consumption[2] | 7,000 | Btu/hp-hr |
| Firing rate | 2.81 | MMBtu/hr |
| Primary fuel[1] | #2 Diesel | |
| Operating hours[1] | 100 | hours |

*Emission Totals:*

| Pollutant | Emission Factor | Reference | Emission Rates[3, 4, 5, 6] PTE (lb/hr) | Annual (tons/yr) |
|---|---|---|---|---|
| *Criteria Pollutants* | | | | |
| $PM_{2.5}$ | 0.20 g/KW-hr | 40 CFR 60 Subpart IIII | 0.13 | 0.01 |
| PM | 0.20 g/KW-hr | 40 CFR 60 Subpart IIII | 0.13 | 0.01 |
| SO | 0.00205 lb/hp-hr | AP-42, Table 3.3-1 (10/96) | 0.82 | 0.041 |
| NOx | 4.00 g/KW-hr[4] | 40 CFR 60 Subpart IIII | 2.64 | 0.132 |
| CO | 3.50 g/KW-hr[4] | 40 CFR 60 Subpart IIII | 2.31 | 0.116 |
| VOC Total | 4.00 g/KW-hr[4] | 40 CFR 60 Subpart IIII | 2.64 | 0.132 |
| *Hazardous/Toxic Air Pollutants* | | | | |
| Benzene | 9.33E-04 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.003 | 0.0001 |
| Toluene | 4.09E-04 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.001 | 0.0001 |
| Xylenes | 2.85E-04 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.001 | 0.00004 |
| 1,3 - Butadiene | 3.91E-05 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.0001 | 0.00001 |
| Formaldehyde | 1.18E-03 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.003 | 0.0002 |
| Acetaldehyde | 7.67E-04 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.002 | 0.0001 |
| Acrolein | 9.25E-05 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.0003 | 0.00001 |
| Total PAH | 1.68E-04 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.000 | 0.00002 |
| Naphthalene | 8.48E-05 lb/MMBtu | AP-42, Table 3.3-2 (10/96) | 0.0002 | 0.00001 |

*Greenhouse Gases*

| Pollutant | Emission Factor[7] | GHG Mass Emission Rates[8] Annual (tons/yr) | GWP[9] | |
|---|---|---|---|---|
| $CO_2$ | 73.96 kg/MMBtu | 22.95 | 1 | |
| $CH_4$ | 0.003 kg/MMBtu | 0.001 | 25 | |
| $N_2O$ | 0.0006 kg/MMBtu | 0.0002 | 298 | |
| CO e | | | | |

REFERENCE/NOTES

1. Provided by facility.
2. Firing rate (MMBtu/hr) = (Heat Conversion Factor (Btu/hp-hr) x Operating Rate (hp))/1000000
3. Emission calculation for $PM_{2.5}$, $PM_{10}$, NOx, CO, VOC.
   $ER_{avg/max}$ (lb/hr) = Engine rating (HP) x EF (g/KW-hr) x (1 lb/hp-hr/608.277 g/kw-hr)
   $ER_{ann}$ (tons/yr) = ($ER_{avg}$ (lbs/hr) x Operating Time (hrs))/2000 lbs/ton
4. Per 40 CFR 60 Subpart III (which directs to 40 CFR 89.112), NMHC + NOX emission standard is 4.0 g/hp-hr. For purposes of determining potential emissions of NOx and VOC, the combined emission standard for NMHC + NOx is used for each pollutant in the absence of separate emission standards for NOx and VOC. However, for purposes of demonstrating compliance with the applicable standard, the total emissions of NOx and VOC will be compared against the combined emission standard for HC + NOx.
5. Emission calculation for $SO_2$.
   ERavg/max (lbs/hr) = Engine rating (hp) x EFavg/max (lbs/hp-hr)
   $ER_{ann}$ (tons/yr) = ($ER_{avg}$ (lbs/hr) x Operating Time (hrs))/2000 lbs/ton
6. Emission calculation for HAPs.
   ERavg/max (lbs/hr) = Firing rate (MMBtu/hr) x EFavg/max (lb/MMBtu)
   $ER_{ann}$ (tons/yr) = ($ER_{avg}$ (lbs/hr) x Operating Time (hrs))/2000 lbs/ton
7. Emission factor based on 40 CFR 98, Tables C-1 and C-2, for Petroleum (Distillate Fuel Oil No.2).
8. Emission rates (ER) calculated as specified in 40 CFR 98.33(a)(1)(iii) and 40 CFR 98.33(c)(1)(ii) and in accordance with GHG: ER (tons/yr) = (Total) Firing Rate (MMBtu/hr) x (Emission Factor (kg/106 Btu) x 1000 g/kg / 453.59 g/lb) x Operating Hours (hr

$CO_2e$: ER (tons/yr) = GHG Mass Emission Rate * GWP

9. GWPs based on 40 CFR 98, Table A-1.

| COMPANY | | FACILITY NAME |
|---|---|---|
| Amite BioEnergy LLC | | Wood Pellet Manufacturing Facility |
| DESCRIPTIVE NAME OF EMISSION POINT | Short Name | Emission Point ID |
| Paved Roads (Fugitives) | PVRD | NA |

| Operating Data | | |
|---|---|---|
| Feedstock delivery[1] | 178 | vehicles/day |
| Miscellaneous [1] | 90 | vehicles/day |
| Distance traveled[1] | 0.85 | miles/vehicle |
| Road surface silt loading (sL)[2] | 1.1 | $g/m^2$ |
| Average weight of vehicle (W)[1] | 29 | tons |
| Days rainfall >0.01" (P)[3] | 105 | days |
| $PM_{10}$ particle size multiplier (k)[4] | 0.0022 | |
| $PM_{2.5}$ particle size multiplier (k)[4] | 0.00054 | |
| Days in average period (N)[1] | 365 | days |
| Operating hours[1] | 8760 | hrs/yr |

| Vehicle Traffic | Vehicles/Day | Miles/Vehicle | VMT/Day[5] | VMT/Year[6] |
|---|---|---|---|---|
| Feedstock Delivery | 178 | 0.85 | 151.53 | 55,307 |
| Miscellaneous | 90 | 0.85 | 76.33 | 27,862 |
| | | | | **83,169** |

| *Emission Totals:* | | | |
|---|---|---|---|
| Pollutant | Emission Factor[7] | Emission Rates[8] PTE (lb/hr) | Annual (tons/yr) |
| $PM_{2.5}^{10}$ | 0.0170 lbs $PM_{2.5}$/VMT | 0.16 | 0.71 |
| PM | 0.0691 lbs $PM_{10}$/VMT | 0.66 | 2.87 |

REFERENCE/NOTES

1. Based on information provided by Jamaria Warren (Drax Biomass) to Sharon Killian (Trinity) via email on August 23, 2021.
2. AP-42; Table 13.2.1-3.
3. AP-42; Figure 13.2.1-2
4. AP-42; Table 13.2.1-1
5. VMT/day = vehicles/day x miles/vehicle
6. VMT/year = VMT/day x 365 days/hyr
7. Emission factor based on EPA's AP-42 Section 13.2.1 - Equation 1 (01/2011).

   $E\ (lb/VMT) = [k * (sL)^{0.91} * (W)^{1.02}] \times [1-(P/4N)]$
8. Emission Rates (ER) were calcuated as follows:

   $ER_{Avg}$ (lb/hr) = $ER_{Annual}$ (tons/yr) * 2000 lb/ton / Operating Hours (hrs/yr)

   $ER_{Max}$ (lb/hr) = $ER_{Avg}$ (lb/hr)

   $ER_{Annual}$ (tons/yr) = EF (lbs $PM_{10/2.5}$/VMT) x VMT/year / 2000 (lbs/ton)

## Summary of Volatile Organic Compound (VOC) and Formaldehyde Emissions Test Results
## Drax Biomass
## November 26-30, 2018

| Equipment | Test Run | Start Time (Military) | Stop Time (Military) | Stack Gas Flow Rate (standard wet $ft^3$/minute) | Water Vapor in Stack Gas (percent) | Volatile Organic Compound Emissions (as propane, ppm-wet) | Volatile Organic Compound Emissions (lbs/hr) | Volatile Organic Compound Emissions (tons/yr) |
|---|---|---|---|---|---|---|---|---|
| Primary Hammermill 1A (AA-004) | RUN 1 | 14:20 | 15:20 | 8,809 | - | 42.8 | 2.59 | 11.36 |
| | RUN 2 | 15:28 | 16:28 | 8,901 | - | 38.7 | 2.37 | 10.37 |
| | RUN 3 | 16:37 | 17:37 | 8,716 | - | 45.3 | 2.72 | 11.90 |
| **Average** | | | | **8,809** | **-** | **42.3** | **2.56** | **11.21** |
| Primary Hammermill 1B (AA-004) | RUN 1 | 14:20 | 15:20 | 9,529 | - | 62.0 | 4.06 | 17.79 |
| | RUN 2 | 15:28 | 16:28 | 9,507 | - | 61.9 | 4.04 | 17.72 |
| | RUN 3 | 16:37 | 17:37 | 9,416 | - | 73.0 | 4.72 | 20.70 |
| **Average** | | | | **9,484** | **-** | **65.6** | **4.28** | **18.73** |
| Primary Hammermill 2A (AA-004) | RUN 1 | 9:35 | 10:35 | 8,929 | - | 140.0 | 8.59 | 37.63 |
| | RUN 2 | 11:00 | 12:00 | 9,233 | - | 131.4 | 8.34 | 36.51 |
| | RUN 3 | 12:19 | 13:19 | 9,593 | - | 122.6 | 8.08 | 35.39 |
| **Average** | | | | **9,252** | **-** | **131.3** | **8.34** | **36.51** |
| Primary Hammermill 2B (AA-004) | RUN 1 | 9:35 | 10:35 | 6,766 | - | 123.0 | 5.72 | 25.06 |
| | RUN 2 | 11:00 | 12:00 | 6,820 | - | 113.3 | 5.31 | 23.26 |
| | RUN 3 | 12:19 | 13:19 | 6,758 | - | 104.2 | 4.84 | 21.20 |
| **Average** | | | | **6,781** | **-** | **113.5** | **5.29** | **23.17** |
| Primary Hammermill 3A (AA-004) | RUN 1 | 14:13 | 15:13 | 8,455 | - | 64.9 | 3.77 | 16.52 |
| | RUN 2 | 15:40 | 16:40 | 8,445 | - | 65.8 | 3.82 | 16.72 |
| | RUN 3 | 17:00 | 18:00 | 8,538 | - | 61.3 | 3.60 | 15.76 |
| **Average** | | | | **8,479** | **-** | **64.0** | **3.73** | **16.33** |
| Primary Hammermill 3B (AA-004) | RUN 1 | 14:13 | 15:13 | 8,733 | - | 43.5 | 2.61 | 11.43 |
| | RUN 2 | 15:40 | 16:40 | 8,604 | - | 47.2 | 2.79 | 12.23 |
| | RUN 3 | 17:00 | 18:00 | 8,636 | - | 46.9 | 2.78 | 12.19 |
| **Average** | | | | **8,658** | **-** | **45.9** | **2.73** | **11.95** |
| Secondary Hammermill 1 (AA-007) | RUN 1 | 9:20 | 10:20 | 7,317 | - | 131.5 | 6.6 | 29.0 |
| | RUN 2 | 10:32 | 11:32 | 7,291 | - | 141.6 | 7.1 | 31.1 |
| | RUN 3 | 11:48 | 12:48 | 7,241 | - | 150.9 | 7.5 | 32.9 |
| **Average** | | | | **7,283** | **-** | **141.3** | **7.07** | **31.0** |
| Secondary Hammermill 2 (AA-007) | RUN 1 | 9:20 | 10:20 | 8,824 | - | 115.5 | 7.0 | 30.7 |
| | RUN 2 | 10:32 | 11:32 | 8,565 | - | 114.1 | 6.7 | 29.4 |
| | RUN 3 | 11:48 | 12:48 | 8,362 | - | 113.1 | 6.5 | 28.5 |
| **Average** | | | | **8,584** | **-** | **114.2** | **6.74** | **29.5** |
| Secondary Hammermill 3 (AA-007) | RUN 1 | 9:20 | 10:20 | 10,121 | - | 87.2 | 6.1 | 26.6 |
| | RUN 2 | 10:32 | 11:32 | 10,076 | - | 109.8 | 7.6 | 33.3 |
| | RUN 3 | 11:48 | 12:48 | 10,182 | - | 107.2 | 7.5 | 32.9 |
| **Average** | | | | **10,126** | **-** | **101.4** | **7.06** | **30.9** |

## Summary of Volatile Organic Compound (VOC) and Formaldehyde Emissions Test Results
## Drax Biomass
## November 26-30, 2018

| Equipment | Test Run | Start Time (Military) | Stop Time (Military) | Stack Gas Flow Rate (standard wet $ft^3$/minute) | Water Vapor in Stack Gas (percent) | Volatile Organic Compound Emissions (as propane, ppm-wet) | Volatile Organic Compound Emissions (lbs/hr) | Volatile Organic Compound Emissions (tons/yr) |
|---|---|---|---|---|---|---|---|---|
| Cooler 1AB | RUN 1 | 7:05 | 8:05 | 21,075 | - | 142.8 | 20.7 | 90.6 |
| | RUN 2 | 8:12 | 9:12 | 21,138 | - | 143.7 | 20.9 | 91.5 |
| | RUN 3 | 9:21 | 10:21 | 21,048 | - | 143.5 | 20.8 | 90.9 |
| **Average** | | | | **21,087** | **-** | **143.4** | **20.78** | **91.0** |
| Cooler 1CD | RUN 1 | 11:35 | 12:57 | 17,644 | - | 156.8 | 19.0 | 83.3 |
| | RUN 2 | 13:06 | 14:06 | 17,683 | - | 137.5 | 16.7 | 73.2 |
| | RUN 3 | 14:13 | 15:13 | 17,816 | - | 143.7 | 17.6 | 77.1 |
| **Average** | | | | **17,714** | **-** | **146.0** | **17.78** | **77.9** |
| Cooler 2AB | RUN 1 | 14:26 | 15:26 | 16,171 | - | 169.9 | 18.9 | 82.7 |
| | RUN 2 | 15:31 | 16:31 | 16,084 | - | 170.1 | 18.8 | 82.4 |
| | RUN 3 | 16:38 | 17:38 | 16,295 | - | 170.6 | 19.1 | 83.7 |
| **Average** | | | | **16,183** | **-** | **170.2** | **18.93** | **82.9** |
| Cooler 2CD | RUN 1 | 7:05 | 8:05 | 15,953 | - | 191.4 | 21.0 | 91.9 |
| | RUN 2 | 8:12 | 9:12 | 15,991 | - | 197.3 | 21.7 | 95.0 |
| | RUN 3 | 9:21 | 10:21 | 15,624 | - | 165.2 | 17.7 | 77.7 |
| **Average** | | | | **15,856** | **-** | **184.6** | **20.14** | **88.2** |
| Cooler 3AB | RUN 1 | 10:54 | 11:55 | 17,132 | - | 176.3 | 20.8 | 90.9 |
| | RUN 2 | 12:38 | 13:38 | 17,319 | - | 168.5 | 20.1 | 87.9 |
| | RUN 3 | 17:57 | 18:57 | 17,452 | - | 143.1 | 17.2 | 75.2 |
| **Average** | | | | **17,301** | **-** | **162.6** | **19.33** | **84.7** |
| Cooler 3CD | RUN 1 | 15:25 | 17:35 | 17,262 | - | 142.9 | 17.0 | 74.3 |
| | RUN 2 | 17:40 | 18:40 | 17,177 | - | 140.5 | 16.6 | 72.7 |
| | RUN 3 | 18:45 | 19:45 | 17,158 | - | 145.4 | 17.2 | 75.1 |
| **Average** | | | | **17,199** | **-** | **143.0** | **16.90** | **74.0** |
| Loadout Silo | RUN 1 | 10:37 | 11:37 | 45,788 | - | 4.68 | 1.47 | 6.45 |
| | RUN 2 | 11:41 | 12:41 | 46,377 | - | 5.43 | 1.73 | 7.58 |
| | RUN 3 | 12:45 | 13:45 | 46,583 | - | 6.55 | 2.10 | 9.18 |
| **Average** | | | | **46,249** | **-** | **5.55** | **1.77** | **7.74** |
| RTO | RUN 1 | 16:24 | 17:24 | 137,942 | 42.7 | 26.0 | 24.6 | 107.9 |
| | RUN 2 | 17:50 | 18:50 | 137,936 | 42.7 | 20.4 | 19.3 | 84.5 |
| | RUN 3 | 19:16 | 20:16 | 139,995 | 41.8 | 11.2 | 10.8 | 47.2 |
| **Average** | | | | **138,624** | **42.4** | **19.18** | **18.24** | **79.87** |

| Equipment | Test Run | Start Time (Military) | Stop Time (Military) | Stack Gas Flow Rate (standard wet $ft^3$/minute) | Water Vapor in Stack Gas (percent) | Formaldehyde Emissions (ppm-wet) | Formaldehyde Emissions (lbs/hr) | Formaldehyde Emissions (tons/yr) |
|---|---|---|---|---|---|---|---|---|
| RTO | RUN 1 | 16:24 | 17:24 | 137,942 | 42.7 | 1.28 | 0.82623 | 3.62 |
| | RUN 2 | 17:50 | 18:50 | 138,405 | 42.7 | 0.84 | 0.54403 | 2.38 |
| | RUN 3 | 19:16 | 20:16 | 140,465 | 41.8 | 0.46 | 0.30236 | 1.32 |
| **Average** | | | | **138,937** | **42.4** | **0.9** | **0.55754** | **2.44** |

DRAX Morehouse
Bastrop, LA

| Source | Date | Total PM lbs/hr | PM < 10 um lbs/hr | PM < 2.5 um lbs/hr |
|---|---|---|---|---|
| Primary Hammermill 1a | 3/12/2019 | 0.063 | 0.043 | 0.017 |
| Primary Hammermill 2a | 3/12/2019 | 0.063 | 0.055 | 0.035 |
| Primary Hammermill 3a | 3/12/2019 | 0.167 | 0.109 | 0.101 |
| **Average Primary Hammermills** | | **0.098** | **0.069** | **0.051** |
| Cooler 1CD | 3/13/2019 | 0.208 | 0.228 | 0.206 |
| Cooler 2 CD | 3/13/2019 | 0.198 | 0.168 | 0.133 |
| Cooler 3 AB | 3/13/2019 | 0.306 | 0.210 | 0.141 |
| **Average Coolers** | | **0.237** | **0.202** | **0.160** |
| Secondary Hammermill 1 | 3/14/2019 | 0.076 | 0.008 | 0.008 |
| Secondary Hammermill 2 | 3/14/2019 | 0.218 | 0.205 | 0.173 |
| **Average Secondary Hammermills** | | **0.147** | **0.1065** | **0.0905** |
| Rail Loadout | 3/14/2019 | 0.238 | 0.136 | 0.101 |
| Dryer/RTO * | 3/15/2019 | 1.64 | 1.64 | 1.64 |

* RTO was 41% moisture with a 265 degree stack temperature.
There was condensed water in the ports so we were reluctant to attempt a method 201a.
The Filterable fraction of the sample was assumed to be PM < 2.5 um. This made up around 10 percent of the PM and the Condensable fraction was the balance.

Drax Morehouse
February 10-24, 2016 Compliance Test Results

Table 4 RTO Outlet (EQT0003) $SO_2$ Compliance Test Summary

| Run No. | | 1 | 2 | 3 | Average |
|---|---|---|---|---|---|
| Sulfur Dioxide ($SO_2$) | ppmv | 12.7 | 12.5 | 1.6 | 8.9 |
| | lb/hr | 9.09 | 9.26 | 1.16 | 6.50 |

This is an excerpt from Table 4 RTO Outlet (EQT0003) PM, $SO_2$, $NO_x$, and CO Compliance Test Summary directly from Section 1.3 Test Results and Discussions from the April 2016 Emission Compliance Test Report by Providence.

Drax Amite
December 14-29, 2015 Compliance Test Results

| Source | Parameter | Test Results | |
|---|---|---|---|
| RTO Outlet (EQPT1) | CO | 27.98 | lb/hr |
| | $NO_X$ | 39.64 | lb/hr |

This is an excerpt from Table 2 Compliance Test Results directly from Section 1.3 Test Results and Discussions from the February 2016 Emission Compliance Test Report by Providence.

**Morehouse BioEnergy LLC**
**Beekman, Louisiana**
**Material Handling and Storage (VOC and HAP)**

**SOURCE DESCRIPTION**

A number of process areas produce VOC and HAP emissions. Emissions are based on the results of a stack test conducted at this facility in February 10-26, 2016 and March 17, 2016. The production rates used to establish emissions are post-dryer production rates at each piece of equipment.

**OPERATING PARAMETERS**

Finished Pellet Operations

| Source ID | Emission Source | Potential Operating Hours | Potential Max Hourly Throughput (ton/hr) | Potential Annual Throughput (ton/yr) | VOC Emission Factor (lb/ton) | Potential VOC Emission Rate (avg lb/hr) | Potential VOC Emission Rate (max lb/hr) | Potential VOC Emission Rate (tpy) | Methanol Emission Factor (lb/ton) | Formaldehyde Emission Factor (lb/ton) | Acetaldehyde Emission Factor (lb/ton) | Potential Methanol Emission Rate (lb/hr) | Potential Formaldehyde Emission Rate (lb/hr) | Potential Acetaldehyde Emission Rate (lb/hr) | Potential Total HAP Emission Rate (lb/hr) | Maximum Methanol Emission Rate (lb/hr) | Maximum Formaldehyde Emission Rate (lb/hr) | Maximum Acetaldehyde Emission Rate (lb/hr) | Potential Methanol Emission Rate (tpy) | Potential Formaldehyde Emission Rate (tpy) | Potential Acetaldehyde Emission Rate (tpy) | Potential Total HAP Emission Rate (tpy) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EQT0004 | Primary Hammermill Feed Silo, Bin Vent | 8,760 | 103.6 | 578,052 | 0.0201 | 1.32 | 2.08 | 5.80 | 0.0010 | 0.0019 | 0.0010 | 0.0627 | 0.1255 | 0.0627 | 0.2509 | 0.0984 | 0.1969 | 0.0984 | 0.2748 | 0.5495 | 0.2748 | 1.0990 |
| EQT0021 | Primary Hammermill Pneumatic System 1 | 8,760 | 17.3 | 96,342 | 0.298 | 3.28 | 5.14 | 14.35 | 0.0025 | 0.0051 | 0.0025 | 0.0279 | 0.0558 | 0.0279 | 0.1115 | 0.2625 | 0.5250 | 0.2625 | 0.1221 | 0.2442 | 0.1221 | 0.4884 |
| EQT0022 | Primary Hammermill Pneumatic System 2 | 8,760 | 17.3 | 96,342 | 0.298 | 3.28 | 5.14 | 14.35 | 0.0025 | 0.0051 | 0.0025 | 0.0279 | 0.0558 | 0.0279 | 0.1115 | 0.2625 | 0.5250 | 0.2625 | 0.1221 | 0.2442 | 0.1221 | 0.4884 |
| EQT0023 | Primary Hammermill Pneumatic System 3 | 8,760 | 17.3 | 96,342 | 0.298 | 3.28 | 5.14 | 14.35 | 0.0025 | 0.0051 | 0.0025 | 0.0279 | 0.0558 | 0.0279 | 0.1115 | 0.2625 | 0.5250 | 0.2625 | 0.1221 | 0.2442 | 0.1221 | 0.4884 |
| EQT0024 | Primary Hammermill Pneumatic System 4 | 8,760 | 17.3 | 96,342 | 0.298 | 3.28 | 5.14 | 14.35 | 0.0025 | 0.0051 | 0.0025 | 0.0279 | 0.0558 | 0.0279 | 0.1115 | 0.2625 | 0.5250 | 0.2625 | 0.1221 | 0.2442 | 0.1221 | 0.4884 |
| EQT0025 | Primary Hammermill Pneumatic System 5 | 8,760 | 17.3 | 96,342 | 0.298 | 3.28 | 5.14 | 14.35 | 0.0025 | 0.0051 | 0.0025 | 0.0279 | 0.0558 | 0.0279 | 0.1115 | 0.2625 | 0.5250 | 0.2625 | 0.1221 | 0.2442 | 0.1221 | 0.4884 |
| EQT0026 | Primary Hammermill Pneumatic System 6 | 8,760 | 17.3 | 96,342 | 0.298 | 3.28 | 5.14 | 14.35 | 0.0025 | 0.0051 | 0.0025 | 0.0279 | 0.0558 | 0.0279 | 0.1115 | 0.2625 | 0.5250 | 0.2625 | 0.1221 | 0.2442 | 0.1221 | 0.4884 |
| EQT0006 | Secondary Hammermill Feed Silo 1, Bin Vent | 8,760 | 69.0 | 385,368 | 0.0201 | 0.88 | 1.38 | 3.86 | 0.0010 | 0.0019 | 0.0010 | 0.0418 | 0.0836 | 0.0418 | 0.1673 | 0.0984 | 0.1969 | 0.0984 | 0.1832 | 0.3663 | 0.1832 | 0.7327 |
| EQT0007 | Secondary Hammermill Feed Silo 2, Bin Vent | 8,760 | 34.5 | 192,684 | 0.0201 | 0.44 | 0.69 | 1.93 | 0.0010 | 0.0019 | 0.0010 | 0.0209 | 0.0418 | 0.0209 | 0.0836 | 0.0984 | 0.1969 | 0.0984 | 0.0916 | 0.1832 | 0.0916 | 0.3663 |
| EQT0027 | Secondary Hammermill Pneumatic System 1 | 8,760 | 34.5 | 192,684 | 0.255 | 5.61 | 8.80 | 24.55 | 0.0013 | 0.0025 | 0.0013 | 0.0279 | 0.0558 | 0.0279 | 0.1115 | 0.1313 | 0.2625 | 0.1313 | 0.1221 | 0.2442 | 0.1221 | 0.4884 |
| EQT0028 | Secondary Hammermill Pneumatic System 2 | 8,760 | 34.5 | 192,684 | 0.255 | 5.61 | 8.80 | 24.55 | 0.0013 | 0.0025 | 0.0013 | 0.0279 | 0.0558 | 0.0279 | 0.1115 | 0.1313 | 0.2625 | 0.1313 | 0.1221 | 0.2442 | 0.1221 | 0.4884 |
| EQT0029 | Secondary Hammermill Pneumatic System 3 | 8,760 | 34.5 | 192,684 | 0.255 | 5.61 | 8.80 | 24.55 | 0.0013 | 0.0025 | 0.0013 | 0.0279 | 0.0558 | 0.0279 | 0.1115 | 0.1313 | 0.2625 | 0.1313 | 0.1221 | 0.2442 | 0.1221 | 0.4884 |
| EQT0008 | Pellet Cooler Pneumatic System 1 | 8,760 | 17.3 | 96,342 | 0.087 | 0.96 | 1.50 | 4.19 | 0.0019 | 0.0038 | 0.0019 | 0.0209 | 0.0418 | 0.0209 | 0.0836 | 0.1969 | 0.3938 | 0.1969 | 0.0916 | 0.1832 | 0.0916 | 0.3663 |
| EQT0009 | Pellet Cooler Pneumatic System 2 | 8,760 | 17.3 | 96,342 | 0.087 | 0.96 | 1.50 | 4.19 | 0.0019 | 0.0038 | 0.0019 | 0.0209 | 0.0418 | 0.0209 | 0.0836 | 0.1969 | 0.3938 | 0.1969 | 0.0916 | 0.1832 | 0.0916 | 0.3663 |
| EQT0010 | Pellet Cooler Pneumatic System 3 | 8,760 | 17.3 | 96,342 | 0.087 | 0.96 | 1.50 | 4.19 | 0.0019 | 0.0038 | 0.0019 | 0.0209 | 0.0418 | 0.0209 | 0.0836 | 0.1969 | 0.3938 | 0.1969 | 0.0916 | 0.1832 | 0.0916 | 0.3663 |
| EQT0011 | Pellet Cooler Pneumatic System 4 | 8,760 | 17.3 | 96,342 | 0.087 | 0.96 | 1.50 | 4.19 | 0.0019 | 0.0038 | 0.0019 | 0.0209 | 0.0418 | 0.0209 | 0.0836 | 0.1969 | 0.3938 | 0.1969 | 0.0916 | 0.1832 | 0.0916 | 0.3663 |
| EQT0012 | Pellet Cooler Pneumatic System 5 | 8,760 | 17.3 | 96,342 | 0.087 | 0.96 | 1.50 | 4.19 | 0.0019 | 0.0038 | 0.0019 | 0.0209 | 0.0418 | 0.0209 | 0.0836 | 0.1969 | 0.3938 | 0.1969 | 0.0916 | 0.1832 | 0.0916 | 0.3663 |
| EQT0030 | Pellet Cooler Pneumatic System 6 | 8,760 | 17.3 | 96,342 | 0.087 | 0.96 | 1.50 | 4.19 | 0.0019 | 0.0038 | 0.0019 | 0.0209 | 0.0418 | 0.0209 | 0.0836 | 0.1969 | 0.3938 | 0.1969 | 0.0916 | 0.1832 | 0.0916 | 0.3663 |
| EQT0015 | Pellet Storage Silo 1, Bin Vent | 8,760 | 51.8 | 289,026 | 0.0201 | 0.66 | 1.04 | 2.90 | 0.0010 | 0.0019 | 0.0010 | 0.0314 | 0.0627 | 0.0314 | 0.1255 | 0.0984 | 0.1969 | 0.0984 | 0.1374 | 0.2748 | 0.1374 | 0.5495 |
| EQT0016 | Pellet Storage Silo 2, Bin Vent | 8,760 | 51.8 | 289,026 | 0.0201 | 0.66 | 1.04 | 2.90 | 0.0010 | 0.0019 | 0.0010 | 0.0314 | 0.0627 | 0.0314 | 0.1255 | 0.0984 | 0.1969 | 0.0984 | 0.1374 | 0.2748 | 0.1374 | 0.5495 |
| EQT0017 | Screened Materials Return[2] | 8,760 | 10.4 | 57,805 | 0.0201 | 0.13 | 0.21 | 0.58 | 0.0010 | 0.0019 | 0.0010 | 0.0063 | 0.0125 | 0.0063 | 0.0251 | 0.0984 | 0.1969 | 0.0984 | 0.0275 | 0.0550 | 0.0275 | 0.1099 |
| EQT0031 | Pellet Loading System | 8,760 | 103.6 | 578,052 | 0.0201 | 1.32 | 2.08 | 5.80 | 0.0010 | 0.0019 | 0.0010 | 0.0627 | 0.1255 | 0.0627 | 0.2509 | 0.0984 | 0.1969 | 0.0984 | 0.2748 | 0.5495 | 0.2748 | 1.0990 |

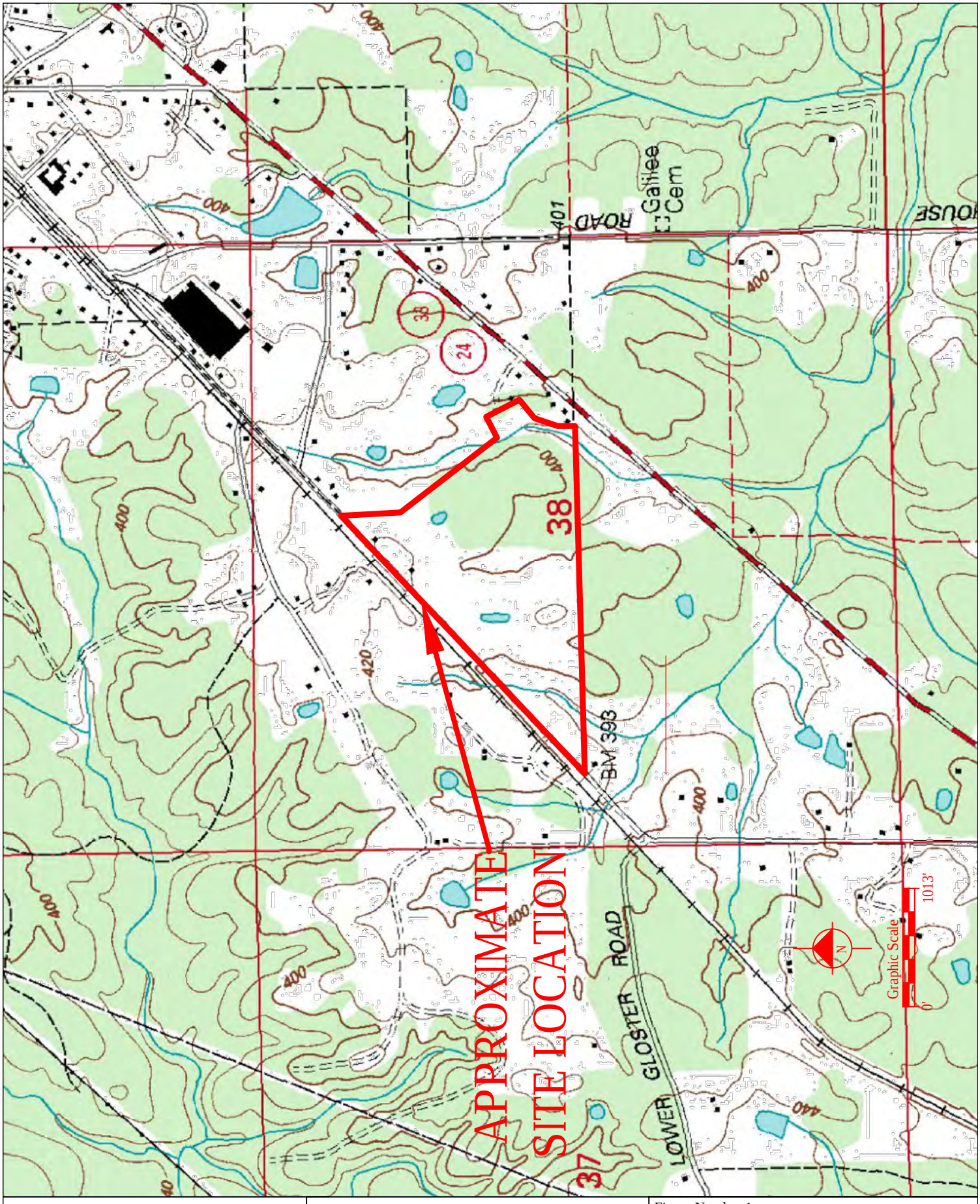
REFERENCES/NOTES

1. Emission rates (ER) calculated as follows:
   $ER_{max}$ (lb/hr) = Maximum Throughput (ton/hr) * Emission Factor (lb/ton) * 1.2 (safety factor)
   $ER_{annual}$ (tons/yr) = Annual Throughput (ton/yr) * Emission Factor (lb/ton)
   $ER_{avg}$ (lb/hr) = $ER_{Annual}$ * 2000 (lb/ton) / Operating Hours (hr/yr)

2. Only a limited amount of material passes through Screened Materials Return. Therefore, it was conservatively assumed that 10% of the materials passes through the screen.

# APPENDIX C: SITE MAP


Gloster Arboretum
Georgia Pacific No2
Georgia Pacific
AA-501
AA-401D
AA-304
AA-401B
AA-401A
AA-301
AA-401C
AA-308F
AA-308D
AA-303
AA-201
AA-203b
AA-502
AA-302
AA-101
AA-307A
AA-102
Lewis Timber
Old Hwy 24
S Captain Gloster Dr
S Captain Gloster Dr
Imagery Date: 3/19/2019




| | | |
|---|---|---|
| | AMITE BIOENERGY<br>GLOSTER<br>1763 GEORGIA PACIFIC RD #2, GLOSTER, MS 39638 | Figure Number:1<br>Figure Name: Site Location Topographic Map<br>Project:<br>Drawn By: TF |

# APPENDIX D: CAM PLANS – RTO & RCO

**PROPOSED CAM PLAN - RTO**

| Parameter | Description |
|---|---|
| **RTO (VOCs)** | |
| Indicator | Combustion Chamber Outlet Temperature |
| Monitoring Approach | Hourly recording of combustion chamber outlet temperature using a thermocouple. Temperature data will be recorded continuously. |
| Indicator Range | Minimum:<br>* Target range: 1500°F ,<br>but will be determined during initial testing.<br>The temperature will be optimized during facility start-up to minimize natural gas usage in the RTO while maintaining the desired destruction efficiency. |
| Response to Indicators Action Level Range | A combustion chamber outlet that is below the applicable minimum threshold temperature during normal operating conditions value will trigger an audible and/or visible alarm in the control room. Amite BioEnergy will take the following immediate corrective actions:<br>* If the temperature cannot be raised to satisfy the applicable minimum threshold within 30 minutes from the start of the excursion, the furnace/dryer will be shutdown. The cause of the excursion will be conducted with corrective actions implemented and documented prior to re-starting the furnace/dryer.<br>The WESP is equipped with a bypass stack for RTO malfunctions. |
| Quality Improvement Plan Threshold | Six excursions in a six-month reporting period. |
| Performance Criteria Data Representativeness | Maintenance of adequate combustion chamber temperature assures proper destruction of both CO and VOCs; control efficiency is a function of temperature. |
| Averaging Period | Three-hour average. |
| Recordkeeping | Combustion chamber temperature is monitoring continuously. The temperature data will be stored in a data acquisition system. |
| QA/QC Practices and Criteria | Annual calibration or replacement per manufacturer's specifications. |

| Parameter | Description |
|---|---|
| **RTO (VOC & CO)** | |
| Indicator | Annual inspections of burner assemblies, blowers, fans, dampers, refractory lining, oxidizer shell, fuel lines, and ductwork. |
| Monitoring Approach | Inspections of burner assemblies, blowers, fans, dampers, refractory lining, oxidizer shell, fuel lines, and ductwork will be conducted annually. |
| Indicator Range | N/A |
| Response to Indicators Action Level Range | N/A |
| Performance Criteria Data Representative | Inspections will ensure proper operation of the burner and RTO. |
| Averaging Period | Annually. |
| Recordkeeping | Manual logs of inspections. |
| QA/QC Practices and Criteria | Review logs monthly. |

| Parameter | Description |
|---|---|
| **WESP ($PM_{10}$ and $PM_{2.5}$)** | |
| Indicator | Continuous monitoring of secondary current. |
| Monitoring Approach | Continuously monitor secondary current after each of the three transformer/rectifier sets. |
| Indicator Range | Change in current (initial proposed ranges):<br>« <250mA for field no. 1; range will be determined during verification of operational status.<br>« <250mA for field no. 2; range will be determined during verification of operational status.<br>« <250mA for field no. 3; range will be determined during verification of operational status.<br>These ranges will be optimized during facility testing and start-up.<br>A secondary current that is below the applicable minimum threshold value during normal operating conditions will trigger an audible and/or visible alarm in the control room. |
| Response to Indicators Action Level Range | If the ammeter indicates a change in current, Amite BioEnergy will take the following immediate corrective actions:<br>« Review secondary voltage levels for irregularities;<br>« Assess the cause of the change in current;<br>« If review of the other parameters indicates a malfunction, furnace/dryer and WESP will be shutdown.<br>The furnace is equipped with a bypass stack for WESP malfunction. |
| Quality Improvement Plan Threshold | Six excursions in a six-month reporting period. |
| Performance Criteria Data Representative | Current affects the collection efficiency and is typically low and constant. An increase or drop in current indicates a malfunction. |
| Averaging Period | The secondary current will be averaged over a 3-hour period. |
| Recordkeeping | Secondary current is recorded continuously in a data acquisition system. |
| QA/QC Practices and Criteria | Annual calibration or replacement per manufacturer's recommendations. |

| Parameter | Description |
|---|---|
| **WESP ($PM_{10}$ and $PM_{2.5}$)** | |
| Indicator | Continuous monitoring of secondary voltage. |
| Monitoring Approach | Monitor secondary voltage after each transformer/rectifier set. |
| Indicator Range | Change in voltage (initial proposed ranges):<br>« <45 kV for field no. 1; range will be determined during verification of operational status.<br>« <45 kV for field no. 2; range will be determined during verification of operational status.<br>« <45 kV for field no. 3; range will be determined during verification of operational status.<br>These ranges will be optimized during facility testing and start-up.<br>A secondary voltage that is below the applicable minimum threshold value during normal operating conditions will trigger an audible and/or visible alarm in the control room. |
| Response to Indicators Action Level Range | If the voltmeter indicates a change in voltage, Amite BioEnergy will take the following immediate corrective actions:<br>« Review secondary current levels for irregularities;<br>« Assess the cause of the change in voltage;<br>« If review of the other parameters indicates a malfunction, furnace/dryer and WESP will be shutdown. |
| Quality Improvement Plan Threshold | Six excursions in a six-month reporting period. |
| Performance Criteria Data Representative | Voltage affects the collection efficiency and is typically high. A drop in voltage directly affects the collection efficiency of the WESP (the higher the voltage, the more particles are charged and collected. |
| Averaging Period | The secondary voltage will be averaged over a 3-hour period. |
| Recordkeeping | Secondary voltage is recorded continuously in a data acquisition system. |
| QA/QC Practices and Criteria | Annual calibration or replacement per manufacturer's recommendations. |

| Parameter | Description |
|---|---|
| **CYCLONE/FABRIC FILTER ( ($PM_{10}$ and $PM_{2.5}$)** | |
| Indicator | Opacity |
| Monitoring Approach | Visual observations |
| Indicator Range | Observation of visible emissions. |
| Response to Indicators Action Level Range | If visual emissions are observed, Amite BioEnergy will take the following immediate corrective actions:<br>« Increase frequency of inspections to hourly following notes change until issue resolved;<br>« Inspect cyclone for any damage or leaks;<br>« Inspect hammermill filters. |
| Quality Improvement Plan Threshold | Six excursions in a six-month reporting period. |
| Performance Criteria Data Representative | Indication of performance degradation by increase in visible emissions. |
| Averaging Period | Daily |
| Recordkeeping | All visual observations will br recorded in a logbook or database. |
| QA/QC Practices and Criteria | Quarterly inspection of cyclone and hammermill filters. |
| | |
| **Parameter** | **Description** |
| **HAMMERMILL PNEUMATIC SYSTEM FILTERS (Baghouse) ($PM_{10}$ and $PM_{2.5}$)** | |
| Indicator | Continuous pressure drop across filters |
| Monitoring Approach | Differential pressure gauge |
| Indicator Range | Pressure drop range of 2" to 6" H2O. The cleaning cycle is on a timer. |
| Response to Indicators Action Level Range | If a change in pressure drop outside the indicator range is observed, Amite BioEnergy will take the following immediate corrective actions:<br>« Conduct visual observation of Hammermill cyclones;<br>« Inspect filters for any tears or leaks;<br>« Inspect hammermill filters; and<br>« Determine if there is an excursion of visual observations.<br>Differential pressure will be optimized during facility start-up. |
| Quality Improvement Plan Threshold | Six excursions in a six-month reporting period. |
| Performance Criteria Data Representative | Indication of performance degradation by increase or decrease in pressure drop outside the operational ranges. |
| Averaging Period | 3-hour |
| Recordkeeping | All pressure drop measurements will be recorded in an electronic database. |
| QA/QC Practices and Criteria | Calibration of differential pressure gauge per manufacturer's specifications and annual inspection of hammermill filters. |

**PROPOSED CAM PLAN - RCO**

| Parameter | Description |
|---|---|
| **RCO (VOCs)** | |
| Indicator | Combustion Chamber Outlet Temperature |
| Monitoring Approach | Hourly recording of combustion chamber outlet temperature using a thermocouple. Temperature data will be recorded continuously. |
| Indicator Range | Minimum:<br>* Target range: 1500°F (requested range from manufacturer), but will be determined during initial testing. The temperature will be optimized during facility start-up to minimize natural gas usage in the RCO while maintaining the desired destruction efficiency. |
| Response to Indicators Action Level Range | A combustion chamber outlet that is below the applicable minimum threshold temperature during normal operating conditions value will trigger an audible and/or visible alarm in the control room. Morehouse BioEnergy will take the following immediate corrective actions:<br>* If the temperature cannot be raised to satisfy the applicable minimum threshold within 30 minutes from the start of the excursion, half of the hammermills and pellet coolers will be shut down because the RCO has 2 parallel sides. The cause of the excursion will be conducted with corrective actions implemented and documented prior to re-starting the hammermills and pellet coolers. |
| Quality Improvement Plan Threshold | Six excursions in a six-month reporting period. |
| Performance Criteria Data Representativeness | Maintenance of adequate combustion chamber temperature assures proper destruction of VOCs; control efficiency is a function of temperature. |
| Averaging Period | Three-hour average. |
| Recordkeeping | Combustion chamber temperature is monitoring continuously. The temperature data will be stored in a data acquisition system. |
| QA/QC Practices and Criteria | Annual calibration or replacement per manufacturer's specifications. |
| | |
| **Parameter** | **Description** |
| **RCO (VOCs)** | |
| Indicator | Annual inspections of burner/combustion chamber to ensure that all refractory modules are in good shape and that the ceramic media shows no sign of degradation. Remove the main fan access hatch and examine the wheel for signs of particulate deposition or corrosion. Examine the main fan coupling to ensure proper alignment is being maintained. Examine the combustion burner internals. Verify instrumentation calibration. |
| Monitoring Approach | Inspections for burner assemblies, blowers, fans, dampers, refractory lining, oxidizer shell, fuel lines, and ductwork will be conducted annually. |
| Indicator Range | N/A |
| Response to Indicators Action Level Range | N/A |
| Performance Criteria Data Representative | Inspections will ensure proper operation of the burners and RCO. |
| Averaging Period | Annually. |
| Recordkeeping | Manual logs of inspections. |
| QA/QC Practices and Criteria | Review logs monthly. |

# APPENDIX E: CERTIFICATE OF GOOD STANDING

## Jaricus Whitlock

**From:** Laura James
**Sent:** Saturday, November 12, 2022 7:37 AM
**To:** Melissa Fortenberry; Jaricus Whitlock
**Cc:** Krystal Rudolph
**Subject:** FW: Amite BioEnergy MACT Analysis
**Attachments:** ABE MACT Analysis_11-11-22.pdf

FYI, revised Case-by-Case Determination received.

Laura James, PE
Air Program Development Branch Manager
Mississippi Department of Environmental Quality
Air Division
601-961-5675
ljames@mdeq.ms.gov

---

**From:** Mcilwain, Annie <annie.mcilwain@ppmco.com>
**Sent:** Friday, November 11, 2022 2:22 PM
**To:** Laura James <LJAMES@mdeq.ms.gov>
**Subject:** Amite BioEnergy MACT Analysis



Good Afternoon Laura,

Please find attached the Case-by-Case MACT Analysis for Amite BioEnergy. Would you also like a printed copy or does electronic work? If you have any questions, please let me know.

Thanks,

Annie McIlwain, P.E. (MS)
District Manager
PPM Consultants, Inc.
289 Commerce Park Drive, Suite D
Ridgeland, MS 39157
p: 601-956-8233
m: 601-941-3719
annie.mcilwain@ppmco.com
*www.ppmco.com [ppmco.com]*

**NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS**
**MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY (MACT) ANALYSIS**
**AMITE BIOENERGY, LLC**
**GLOSTER, MS.**

## National Emission Standards for Hazardous Air Pollutants

National Emission Standards for Hazardous Air Pollutants (NESHAP) regulate hazardous air pollutant (HAP) emissions and are applicable to certain major and area sources of HAP. NESHAP is found in 40 CFR Part 63 and has been incorporated by reference in 11 Miss. Admin. Code Pt. 2, Ch.1, R.1.8.A. The Amite BioEnergy, LLC (ABE) facility is a major source of HAP because total HAP emissions are greater than 25 tpy and an individual HAP's emissions are greater than 10 tpy.

## 40 CFR 63 Subpart A – General Provisions

Sources subject to a NESHAP are subject to the general requirements in Subpart A unless excluded by the source-specific subpart. Subpart A includes requirements for notifications, emission testing, recordkeeping, monitoring, and reporting. ABE is subject to Subparts B and ZZZZ of Part 63 and as such, Subpart A is applicable to these sources.

## 40 CFR 63 Subpart B – Requirements for Control Technology Determinations for Major Sources – Clean Air Act Section 112(g)

Clean Air Act (CAA) Section 1129(g)(2)(B) requires that new or reconstructed major stationary source that does not belong to a regulated source category for which a NESHAP has been promulgated must control emissions to levels that meet maximum achievable control technology (MACT). ABE is an existing major source of HAP. Wood pellet manufacturing facilities are not applicable to a stationary source category found in 40 CFR Part 63. Therefore, ABE is subject to 112(g) and must prepare a case-by-case MACT analysis required by 40 CFR Part 63 Subpart B.

This analysis addresses case-by-case MACT for the Wood Chip Rotary Dryer, Dry Hammermills, Dry Shavings Hammermills, and Pellet Mill/Coolers since ABE did not include these sources of HAPs in the initial construction permitting procedures. Subpart ZZZZ will not be included in this report as there will be no revision to the Department's MACT review of the Emergency Engines.

As discussed in 40 CFR63.43(d), ABE proposes to specify a control technology that will meet a MACT emission limitation that is as stringent as the emission control which is achieved in practice by the best controlled similar source, and achieve the maximum degree of reduction in emissions

of HAP which can be achieved by utilizing control technologies that can be identified from the available information.

There is no proposed MACT or presumptive MACT established for Wood Pellet Manufacturing Facilities; hence, this analysis relies solely on a review of control technologies installed and effectively operating in a category with similar sources in the wood pellet industry. This analysis proposes to base its approach to recommended emission limitations on similar sources in the source category of Subpart DDDD – National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products in 40 CFR Part 63.2230 – 63.2292.

The following sources of HAP emissions are included in this analysis: Wood Chip Rotary Dryer, Dry Hammermills, Dry Shavings Hammermills, and Pellet Mill/Coolers. Additional sources that have not been emission tested at ABE but may emit HAPs in small amounts based on emission test data from a similar facility include:

- Furnace Bypass Stack
- Wood Chip Rotary Dryer Bypass Stack
- Primary Hammermill Feed Silo Bin Vent
- Dry Shavings Truck Dump/Baghouse
- Dry Fiber Silo Nos. 1 and 2 with Bin Vents
- Pellet Storage Silos Nos. 1 and 2
- Screened Materials Return System
- Pellet Loading System Pneumatic System Filter

## 40 CFR 63 Subpart DDDD - NESHAP for Plywood and Composite Wood Products

Subpart DDDD regulates HAP emissions from plywood and composite wood products. (PCWP) manufacturing facilities located at major sources of HAPs. A PCWP manufacturing facility is defined in §63.2292 as one that manufactures plywood and/or composite wood products by bonding wood material or agricultural fiber to form a panel, engineered wood product, or other product defined in §63.2292. Further, an engineered wood product is defined as a product made with wood elements that are bound together with resin, such as laminated strand lumber and glue-laminated beams. The wood pellets that are manufactured at the ABE do not meet the definition of any of the PCWP products defined as subject to Subpart DDDD. The wood pellets are not an engineered wood product, as they will not be bound together with resin or another chemical agent. As such, this regulation is not applicable.

## Process Description

Amite BioEnergy, LLC (ABE) is an existing wood pellet manufacturing facility located at 1763 S. Georgia Pacific Road #2 in the town of Gloster in Amite County, Mississippi. The primary

raw materials used by the facility are either primarily softwood pine logs that are debarked and chipped (green wood chips) onsite or purchased softwood dry wood shavings from surrounding wood products facilities. Green wood chips are fed into a **wood chip rotary dryer** that is heated with combustion gases that are direct-fired from a 165 MMBTU/hour wood-fired furnace. The dryer reduces the moisture content of the green wood chips from approximately 50 percent to 10 percent. As the wood chips exit the dryer, multi-clones are used to separate the heavier wood chips from the lighter wood chips. The heavier dry wood chips are sent to the **primary hammermill feed silo** via an enclosed conveyor. The lighter wood chips entrained in rotary dryer exhaust gas goes through the multi-clones and enters the **Wet Electrostatic Precipitator (WESP)** and **Regenerative Thermal Oxidizer (RTO)**. The WESP removes 95 percent of the particulate matter (PM) emissions from the dryer exhaust gas. The RTO removes 95 percent of volatile organic compound (VOC) emissions in the exhaust gas from the WESP before being discharged into the atmosphere.

The dry wood chips in the **primary hammermill feed silo** are fed via an enclosed conveyor into **six (6) primary dry hammermills.** The primary dry hammermills resize the wood chips; then, the resized wood chips are sent via an enclosed conveyer to the two (2) dry fiber silos. There are six (6) Primary Dry Hammermill Pneumatic Systems where each system is equipped with a baghouse filter to control particulate matter emissions, and emissions from these baghouse filters are routed to the **Regenerative Catalytic Oxidizer (RCO)** to control VOC emissions.

Dry shavings are received at the dry shavings truck dump and placed into a dry shavings storage bin. Dry shavings from the storage bin are conveyed for resizing in **two (2) Dry Shavings Hammermills** Pneumatic Systems where each system is equipped with a baghouse filter to control particulate matter emissions, and emissions from these baghouse filters are routed to the RCO to control VOC emissions. Resized wood shavings are sent via an enclosed conveyer to the **two (2) dry fiber silos**.

The two (2) dry fiber silos which contain wood fiber from the six (6) dry hammermills and the two (2) dry shavings hammermills is sent via an enclosed conveyor to **eight (8) pellet mills**. Each pellet mill is equipped with two (2) pelletizers and one (1) cooler. The starch silo and starch system add starch as a binder to the wood fiber just before the pellet mill. The wood fiber is pressed through holes in a die. A cutter on other side of the die cuts the exposed pellet from the die. The cut pellets are air cooled before being pneumatically conveyed into **two (2) Pellet Storage Silos.** The **eight (8) Pellet Mills / Coolers** Pneumatic Systems where each system is equipped with a baghouse filter to control particulate matter emissions, and emissions from these baghouse filters are routed to the RCO to control VOC emissions.

When wood pellets are conveyed from the two (2) pellet storage silos and loaded onto trucks for transport, the wood pellets are screened to separate wood dust, and particulate generated in the system after screening is controlled by a baghouse. The screened material is returned to the dry fiber silos with a pneumatic conveyor system.

The total production of wood pellets at ABE is limited to 624,700 oven-dried tons (ODT) per year based on a rolling 12-month total. An "oven-dried ton" equates to a ton of wood at zero percent (0%) moisture. Ultimately the finished wood pellets are used in boilers adapted to combust wood pellets to generate electricity in the United Kingdom.

## ABE Sources of Hazardous Air Pollutants

The primary sources emitting hazardous air pollutants at ABE as presented in the previous section are:

- One (1) Wood Chip Rotary Dryer
- Six (6) Dry Hammermills
- Two (2) Dry Shavings Hammermills
- Eight (8) Pellet Mill/Coolers

The HAP emissions from all of the primary sources described above are controlled before discharging to the atmosphere. The HAP emissions from the one (1) wood chip rotary dryer are controlled by a WESP and RTO. An RCO controls HAP emissions from the six (6) Dry Hammermills, two (2) Dry Shavings Hammermills and eight (8) Pellet Mill/Coolers.

Additional sources that have not been emission tested at ABE but may emit hazardous air pollutants in small amounts based on emission test data from a similar facility include:

- Furnace Bypass Stack
- Wood Chip Rotary Dryer Bypass Stack
- Primary Hammermill Feed Silo Bin Vent
- Dry Shavings Truck Dump/Baghouse
- Dry Fiber Silo Nos. 1 and 2 with Bin Vents
- Pellet Storage Silos Nos. 1 and 2
- Screened Materials Return System
- Pellet Loading System Pneumatic System Filter

## ABE Hazardous Air Pollution Emissions

VOCs which have been designated as hazardous air pollutants are emitted from two primary sources at ABE, the RTO and RCO. The RTO controls VOC/HAP emissions from the wood chip rotary dryer. The RCO controls VOC/HAP emissions from the six (6) Dry Hammermills, two (2) Dry Shavings Hammermills and eight (8) Pellet Mill/Coolers.

In an effort to align hazardous air pollutants emitted at ABE with the source category of Subpart DDDD, 40 CFR 63.2292 defines t*otal hazardous air pollutant emissions* means, the sum of the emissions of the following six compounds was calculated: acetaldehyde, acrolein, formaldehyde, methanol, phenol, and propionaldehyde. The table below presents the estimated emission rate for each HAP emitted from the RTO and RCO.

| Pollutants | ABE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RTO (1,676 °F) | | | | RCO (750°F) | | | |
| | lb/hr | ODT/hr | lb/ODT | tons/year | lb/hr | ODT/hr | lb/ODT | tons/year |
| VOC, Total | 10.30 | 52.75 | 0.195 | 45.114 | 7.80 | 68.80 | 0.113 | 34.164 |
| Acetaldehyde | 0.350 | 52.75 | 6.64E-03 | 1.533 | 0.240 | 68.80 | 3.49E-03 | 1.0512 |
| Acrolein | 0.150 | 52.75 | 2.84E-03 | 0.657 | 0.090 | 68.80 | 1.31E-03 | 0.3942 |
| Formaldehyde | 0.880 | 52.75 | 1.67E-02 | 3.8544 | 0.230 | 68.80 | 3.34E-03 | 1.0074 |
| Methanol | 1.580 | 52.75 | 3.00E-02 | 6.9204 | 2.660 | 68.80 | 3.87E-02 | 11.6508 |
| Phenol | 0.680 | 52.75 | 1.29E-02 | 2.9784 | 1.440 | 68.80 | 2.09E-02 | 6.3072 |
| Propionaldehyde | 0.100 | 52.75 | 1.90E-03 | 0.438 | 0.220 | 68.80 | 3.20E-03 | 0.9636 |

Uncontrolled HAP emissions using the calculated removal efficiency based on test data for the RTO and RCO are presented in the table below:

| Pollutant | ABE RTO & RCO Removal Efficiency | RTO Uncontrolled Using Efficiency (lb/hr) | RTO Uncontrolled Using Efficiency (tons/yr) | RCO Uncontrolled Using Efficiency (lb/hr) | RCO Uncontrolled Using Efficiency (tons/yr) |
|---|---|---|---|---|---|
| VOC, Total | 95.9% | 253.502 | 1110.34 | 191.972 | 840.84 |
| Acetaldehyde | 91.5% | 4.113 | 18.02 | 2.821 | 12.35 |
| Acrolein | 92.1% | 1.895 | 8.30 | 1.137 | 4.98 |
| Formaldehyde | 89.3% | 8.194 | 35.89 | 2.142 | 9.38 |
| Methanol | 73.1% | 5.872 | 25.72 | 9.885 | 43.30 |
| Phenol | 54.5% | 1.496 | 6.55 | 3.168 | 13.87 |
| Propionaldehyde | 85.8% | 0.703 | 3.08 | 1.547 | 6.77 |

## MACT Emission Limits at Other Wood Pellet Mills

The Department recommended presenting information relative to recent permit limits at other wood pellet mills. Sites owned by Drax Biomass, Enviva Biomass, and others are detailed below.

### Drax Biomass, Inc.

Drax Biomass, Inc. (Drax) operates wood pellet mills in Bastrop, Louisiana and Urania, Louisiana. These facilities have not undergone HAP emissions testing to establish permit limits; therefore, a MACT analysis has not been performed. Drax also recently purchased and operates wood pellet mills in Aliceville, Alabama and Demopolis, Alabama. The pellet production capacity of these mills is such that these facilities do not exceed the MACT threshold for total HAP emissions or an individual HAP.

### Enviva Inc.

Enviva Inc. operates ten manufacturing plants in six U.S. states (listed alphabetically):

| | |
|---|---|
| *Ashoskie, NC – 410,000 mt/yr | *Lucedale, MS – 750,000 mt/yr |
| *Amory, MS – 115,000 mt/yr | *Northhampton County, NC – 750,000 mt/yr |
| Cottondale, FL – 780,000 mt/yr | *Sampson County, NC – 600,000 mt/yr |
| Greenwood, SC – 500,000 mt/yr | Southhampton County, VA – 760,000 mt/yr |
| *Hamlet, NC – 600,000 mt/yr | Waycross, GA – 800,000 mt/yr |
| * Facilities discussed in this analysis; mt/yr – metric tons/year | |

Information on only the facilities located in Mississippi and North Carolina could be readily found due to a lack of available online permitting information for other locations.

Overall, a review of the air permits and HAP emissions test data for the Enviva North Carolina facilities showed that these facilities were able to avoid Case-by-Case MACT until controls were installed and emissions testing performed that demonstrated emissions were less than the MACT threshold for total HAPs and any individual HAP. North Carolina offers a MACT avoidance regulation, which applied to Enviva and allowed them to avoid preparing a Case-by Case MACT analysis. The Lucedale, Mississippi facility is the only facility that could be identified for this analysis that has completed a case-by-case MACT analysis. However, it appears that the MDEQ has not issued a final permit decision on the most recent application for Lucedale.

The September 13, 2022, test data for Enviva's Hamlet, NC facility indicates that the facility is not a major source of HAPs. Additionally, North Carolina offers a MACT avoidance regulation at (15A NCAC 02Q.0317 avoidance of 15A NCA 02D.1112). In short, emission sources at Hamlet which are similar to ABE are also controlled with a WESP, RTO and RCO. However, a key difference between ABE and the North Carolina facilities of Enviva is the wood species. ABE uses

80% southern yellow pine, while Enviva uses 80% hardwood. Fewer VOC emissions; thus; fewer HAP emissions occur from drying of hardwood.

The May 5, 2022, test data for Enviva's Northhampton, NC facility indicates that the facility is not a major source of HAPs. The emission sources at Northhampton, which are similar to ABE, are also controlled with a WESP, RTO, and RCO. However, a key difference between ABE and the North Carolina facilities of Enviva is the wood species. ABE uses 80% southern yellow pine, while Enviva uses 80% hardwood. Fewer VOC emissions; thus; fewer HAP emissions occur from drying of hardwood.

Unlike Hamlet and Northhampton facilities, the Sampson facility is a PSD Major facility. The Sampson facility operates with 80% softwood, which is similar to ABE. However, recent test data (test date of May 24, 2022) for Sampson is not available online at the time of the writing of this analysis. The emission sources at Sampson, which are similar to ABE, are also controlled with a WESP, RTO, and RCO.

The Ashoskie facility is not a major source of HAPs. A recent NCEQ inspection report dated July 26, 2022, showed the highest individual HAP emitted was 8.95 tons in 2020. Additionally, the air permit shows that unit operations and pellet production is such that the VOC emissions are not controlled. A WESP, cyclones, and fabric filters are control devices for a wood fired dryer, two (2) dry hammermills and two (2) pellet coolers.

The Amory facility is believed to be a minor source of HAP due to pellet production level.

The Lucedale facility prepared a case-by-case MACT analysis for its dry hammermills, pellet mills and pellet coolers in a recent air permit application of March 2021. These sources are ultimately controlled with WESP/RTO/RCO systems similar to sources at ABE. The MDEQ issued an air permit in 2019; however, a revised permit for the March 2021 application appears to have not been issued at this time.

## MACT Analysis and Recommended Emissions Limitations

### Wood Chip Rotary Dryer

Green wood chips are fed into a wood chip rotary dryer that is heated with combustion gases that are direct-fired from a 165 MMBTU/hour wood-fired furnace. The dryer reduces the moisture content of the green wood chips from approximately 50 percent to 10 percent. The temperature of the dried chips will still be elevated as they exit the rotary dryer material multi-clones resulting in emissions of VOC and HAPs.

The following technologies were identified for use on rotary dryers:

- RTO
- Good Combustion Practices

- RCO
- Thermal Catalytic Oxidizer (TCO)
- Biofiltration Systems

ABE considers these technologies to be available for a rotary dryer.

ABE understands that the use of a biofiltration system has not been demonstrated in practice at a wood pellet manufacturing facility for VOC control. Additionally, the operation of catalyst control downstream of drying operations utilizing WESPs for particulate control at a wood pellet manufacturing facility, which is used at this facility, have not been demonstrated for VOC control. Moreover, an RCO and TCO are prone to major corrosion and catalyst fouling due to deposition of entrained salts and high operating temperatures. Therefore, the RCO, TCO, and biofiltration systems are not technically feasible.

Good combustion practices, as a control technology, are always available and are a technically feasible option for VOC emissions. However, the RTO maintains a 95% to 99% efficiency for VOC emissions, so it is a technically feasible option for VOC control.

The existing RTO at ABE controls wood rotary dryer emissions and achieves a 95% reduction in HAP emissions (measured as VOC). Based a review of several air permits issued to wood pellet facilities in Louisiana and North Carolina, an RTO is commonly used to control VOC emissions from wood chip rotary dryers. For comparison, 40 CFR 63 Subpart DDDD, NESHAP for Plywood and Composite Wood Products, which regulates facilities that manufacture plywood and/or composite wood products by bonding wood materials or agricultural fiber, generally with resin, only requires a HAP reduction of 90%.

**Considering the above, ABE proposes use of an RTO achieving a 95% reduction in HAP emissions (measured as VOC) as MACT for wood chip rotary dryer.**

## Primary Dry Hammermills, Dry Shavings Hammermills, and Pellet Mill/Coolers

As previously described, ABE operates six (6) Primary Dry Hammermills, two (2) Dry Shavings Hammermills, and eight (8) Pellet Mill/Coolers. The primary dry hammermills receive dried wood chips from the primary dry hammermill feed silo. The temperature of the dried chips will remain elevated as they exit the rotary dryer and conveyed from the primary dry hammermill feed silo into the primary dry hammermills resulting in emissions of VOC and HAPs. The hammering action on the wood fiber is also believed to result in emissions of VOC and HAPs from both the primary dry hammermills and the dry shavings hammermills. VOC and HAP emissions are also entrained in the pneumatic air that transfers the wood fiber from the two (2) dry fiber silos into the pellet mill/coolers process units.

The following technologies were identified for use on and hammermills like those at Drax's facility:

- RTO
- RCO

- TCO
- Bio-oxidation / Biofiltration
- Scrubber

ABE considers these technologies to be available for the milling process units described above. ABE understands that neither the use of a TCO, bio-oxidation, biofiltration, nor wet scrubbers have been demonstrated in practice at a wood pellet manufacturing facility for VOC control; accordingly, these are assumed to be technically infeasible options. The RCO and RTO both maintain a control efficiency of up to 99% and are technically feasible options for VOC control. As researched, the RTO and RCO both provide the highest control efficiency for VOC control. However, ABE demonstrated that using operating specifications and emissions calculations in its recent PSD permit application, installation of an RCO for the milling operations is more cost effective than an RTO.

**Considering the above, ABE proposes use of an RCO achieving a 95% reduction in HAP emissions (measured as VOC) as MACT for the Primary Dry Hammermills, Dry Shavings Hammermills, and Pellet Mill/Coolers.**

## Additional Probable Sources of Hazardous Air Pollutants

The following is a list of additional sources that have not been emission tested at ABE but may emit small amounts of hazardous air pollutants:

- Furnace Bypass Stack
- Wood Chip Rotary Dryer Bypass Stack
- Primary Hammermill Feed Silo Bin Vent
- Dry Shavings Truck Dump/Baghouse
- Dry Fiber Silo Nos. 1 and 2 with Bin Vents
- Pellet Storage Silos Nos. 1 and 2
- Screened Materials Return System
- Pellet Loading System Pneumatic System Filter

Testing at other facilities and using a 25% safety factor, the HAPs from pellet finishing operations are rather low as shown in the following table:

| EQT | Description | VOC, Total | Acetaldehyde | Acrolein | Formaldehyde | Methanol | Phenol | Propionaldehyde | Total HAPs |
|---|---|---|---|---|---|---|---|---|---|
| | Units | (tpy) | (tpy) | (tpy) | (tpy) | (tpy) | (tpy) | (tpy) | (tpy) |
| AA-203b | Furnace By-Pass Start/Stop | 0.01 | 0.001 | 0.003 | 0.004 | 0.000 | 0.000 | 0.000 | 0.008 |
| AA-203c | Furnace By-Pass Idle | 0.07 | 0.003 | 0.017 | 0.018 | 0.000 | 0.000 | 0.000 | 0.039 |
| AA-204b | Dryer By-pass Start/Stop | 2.72 | 0.043 | 0.013 | 0.081 | 0.064 | 0.016 | 0.008 | 0.225 |
| AA-302 | Primary Hammermill Feed Silo | 6.88 | 0.345 | 0.000 | 0.658 | 0.345 | 0.000 | 0.000 | 1.347 |
| AA-304 | Dry Shavings Truck Dump/Baghouse | 0.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| AA-305 | Dry Fiber Silo Nos. 1 with Bin Vents | 6.46 | 0.323 | 0.000 | 0.606 | 0.323 | 0.000 | 0.000 | 1.252 |
| AA-306 | Dry Fiber Silo Nos. 2 with Bin Vents | 3.23 | 0.162 | 0.000 | 0.303 | 0.162 | 0.000 | 0.000 | 0.626 |
| AA-401A | Pellet Storage Silo 1, Bin Vent | 4.86 | 0.244 | 0.000 | 0.457 | 0.244 | 0.000 | 0.000 | 0.944 |
| AA-401B | Pellet Storage Silo 2, Bin Vent | 4.86 | 0.244 | 0.000 | 0.457 | 0.244 | 0.000 | 0.000 | 0.944 |
| AA-401C | Sceened Materials Return System | 0.97 | 0.049 | 0.000 | 0.093 | 0.049 | 0.000 | 0.000 | 0.191 |
| AA-401D | Pellet Loading System Pneumatic System Filter | 9.69 | 0.485 | 0.000 | 0.920 | 0.485 | 0.000 | 0.000 | 1.889 |
| | **Total Proposed Emissions:** | **39.77** | **1.90** | **0.03** | **3.60** | **1.91** | **0.02** | **0.01** | **7.46** |

The furnace bypass stack and wood chip rotary dryer bypass stack is approved for operating when upset conditions occur at the WESP and RTO. VOC/HAP emissions are accounted for in the air permit but are not controlled.

The Primary Hammermill Feed Silo Bin Vent is not controlled. However, VOC/HAP emissions from the bin vent is estimated to be small because several tons of entrained VOC/HAP emissions are pneumatically conveyed to the primary dry hammermills and controlled by the RCO.

Dry Shavings Truck Dump receives dry shavings from other wood products facilities. The wood shavings are conveyed to a storage bin after being dumped from the truck. A baghouse is installed to collect fugitive wood dust when the shavings are dumped from the truck. No VOC/HAP emissions are expected from the baghouse filter.

Several tons wood fiber with entrained VOC/HAP emissions controlled by the RCO are pneumatically conveyed from the Dry Fiber Silo Nos. 1 and 2 and the pellet mill/coolers. Therefore, VOC/HAP emissions are considerably reduced from the silos.

When wood pellets are conveyed from the two (2) pellet storage silos and loaded onto trucks for transport, the wood pellets are screened to separate wood dust, and particulate generated in the system after screening is controlled by a baghouse. The screened material is returned to the dry fiber silos with a pneumatic conveyor system. A small amount of VOC/HAP s may be emitted by the pellets when in storage and subsequent loadout. There appears to be no wood pellet manufacturing facilities that have used add on controls for VOC/HAP emissions from pellet storage silos. Given the low amount of total potential HAP emission from pellet storage silos, it has been determined that the addition of controls for the silos may not be cost effective and may result in additional impacts due to increased fuel combustion from the control device such as an RCO.

**Due to the fact that VOC/HAP emissions from the sources related to the silos which are controlled by an RCO, the estimated low level of emissions specifically from the silos, and such silos have not been controlled at other permitted wood pellet manufacturing facilities, ABE proposes no control or work practices as MACT for the silos and pellet loadout system.**