S.C. Department of Health and Environmental Control

Department Decision

Air Quality Title V Operating Permit
Permit No. TV-0160-0022

Allendale Biomass, LLC
307 Airport Loop Road
Fairfax, South Carolina 29827

December 11, 2019

In accordance with the 1976 Code of Laws of South Carolina, as amended, including SC Code Section 44-1-60(D), a Department Decision has been made to issue Air Quality Title V Operating Permit No. TV-0160-0022 to the above-named permittee. This permit was previously placed on public notice and open for public comment from October 29, 2018, through December 27, 2018. Adverse public comments were received by SC DHEC during the comment period. Comments received during the formal comment period regarding air quality issues have been addressed in SC DHEC's *Responses to Comments on Air Quality* document attached to this Department Decision. SC DHEC's decision to issue this permit has been made after consideration and a complete review of the following: the air permit application, applicable state and federal air quality regulations, comments received within the required time frame, and all other pertinent information.

This Department Decision regarding Air Quality Title V Operating Permit No. TV-0160-0022 includes the following; a) the issued permit (Attachment A) which meets the requirements of all applicable air quality regulations; b) a summary of the project, permit, and applicable regulations as outlined in the Statement of Basis (Attachment B); and c) a summary of the comments made by concerned citizens regarding air quality issues and responses by the Bureau of Air Quality, as outlined in the *Responses to Comments on Air Quality Permit No. TV-0160-0022* (Attachment C). This Department Decision (including attachments) will be included in SC DHEC's administrative record for this permit decision.

Steve McCaslin

Steve McCaslin, P. E., Director
Air Permitting Division
Bureau of Air Quality

Attachment A

Air Quality Title V Operating Permit
Permit No. TV-0160-0022

S.C. Department of Health and Environmental Control

Bureau of Air Quality
Title V Operating Permit

Allendale Biomass, LLC
307 Airport Loop Road
Fairfax, South Carolina 29827
Allendale County

In accordance with the provisions of the Pollution Control Act, Sections 48-1-50(5), 48-1-100(A), and 48-1-110(a), the 1976 Code of Laws of South Carolina, as amended, and South Carolina Regulation 61-62, Air Pollution Control Regulations and Standards, the Bureau of Air Quality authorizes the operation of this facility and the equipment specified herein in accordance with valid construction permits, and the plans, specifications, and other information submitted in the Title V permit application received on August 27, 2014, as amended. All official correspondence, plans, permit applications, and written statements are an integral part of the permit. Any false information or misrepresentation in the application for a construction permit may be grounds for permit revocation.

The operation of this facility is subject to and conditioned upon the terms, limitations, standards, and schedules contained herein or as specified by this permit and its accompanying attachments.

Permit Number: **TV-0160-0022**

Issue Date:	**December 11, 2019**	**Effective Date:**	**January 1, 2020**
Expiration Date:	**December 31, 2024**	**Renewal Due Date:**	**June 30, 2024**

Steve McCaslin, P. E., Director
Air Permitting Division
Bureau of Air Quality

RECORD OF REVISIONS		
Date	**Type**	**Description of Changes**

AA Administrative Amendment
MM Minor Modification
SM Significant Modification

A. EMISSION UNIT DESCRIPTION

Emission Unit ID	Emission Unit Description
01	Boiler
02	Cooling Towers
03	Void - Biomass Fuel Chipper (Not Installed)
04	Dry Sorbent Silo
05	Ash Silo

B. EQUIPMENT AND CONTROL DEVICE(S)

B.1 EQUIPMENT FOR EMISSION UNIT 01 - Boiler

Equipment ID	Equipment Description	Installation/ Modification Date	Control Device ID	Emission Point ID
B001	314 Million Btu/hr Biomass Fired Stoker Boiler	2013	ESP, SNCR, DSI	B-001

B.2 CONTROL DEVICE(S) FOR EMISSION UNIT 01 – Boiler

Control Device ID	Control Device Description	Installation/ Modification Date	Pollutant(s) Controlled
ESP	Electrostatic Precipitator	2013	PM, PM_{10}, $PM_{2.5}$
SNCR	Selective Non-Catalytic Reduction	2013	NO_x
DSI	Dry Sorbent Injection (Voluntary)	2013	HCl

B.3 EQUIPMENT FOR EMISSION UNIT 02 – Cooling Towers

Equipment ID	Equipment Description	Installation/ Modification Date	Control Device ID	Emission Point ID
CT	2-Celled Cooling Tower	2013	None	CT

B.4 EQUIPMENT FOR EMISSION UNIT 04 – Dry Sorbent Silo

Equipment ID	Equipment Description	Installation/ Modification Date	Control Device ID	Emission Point ID
DSS	Dry Sorbent Silo with Inherent Bin Vent	2013	None	DSS

B.5 EQUIPMENT FOR EMISSION UNIT 05 – Ash Silo

Equipment ID	Equipment Description	Installation/ Modification Date	Control Device ID	Emission Point ID
AS	Ash Silo with Inherent Bin Vent	2013	None	AS

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Conditions
C.1	**Emission Unit ID:** All **Equipment ID:** All **Control Device ID:** All Equipment capacities provided under the Equipment Description column of the Equipment Tables above are not intended to be permit limits unless otherwise specified within the Table of Conditions for the particular equipment. However, this condition does not exempt the facility from the construction permitting process, from PSD review, nor from any other applicable requirements that must be addressed prior to increasing production rates.
C.2	**Emission Unit ID:** All **Equipment ID:** All **Control Device ID:** All (S.C. Regulation 61-62.1, Section II.J.1.g) A copy of the Department issued construction and/or operating permit must be kept readily available at the facility at all times. The owner or operator shall maintain such operational records; make reports; install, use, and maintain monitoring equipment or methods; sample and analyze emissions or discharges in accordance with prescribed methods at locations, intervals, and procedures as the Department shall prescribe; and provide such other information as the Department reasonably may require. All records required to demonstrate compliance with the limits established under this permit shall be maintained on site for a period of at least 5 years from the date the record was generated and shall be made available to a Department representative upon request.

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Conditions
C.3	**Emission Unit ID:** 01 **Equipment ID:** B001 **Control Device ID:** SNCR, ESP The owner/operator shall inspect, calibrate, adjust, and maintain continuous monitoring systems, monitoring devices, and gauges in accordance with manufacturer's specifications or good engineering practices. The owner/operator shall maintain on file all measurements including continuous monitoring system or monitoring device performance measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required in a permanent form suitable for inspection by Department personnel. (S.C. Regulation 61-62.1, Section II.J.1.d) Sources required to have continuous emission monitors shall submit reports as specified in applicable parts of the permit, law, regulations, or standards.
C.4	**Emission Unit ID:** 01 **Equipment ID:** B001 **Control Device ID:** SNCR, ESP All gauges shall be readily accessible and easily read by operating personnel and Department personnel (i.e. on ground level or easily accessible roof level). Monitoring parameter readings (i.e., pressure drop readings, etc.) and inspection checks shall be maintained in logs (written or electronic), along with any corrective action taken when deviations occur. Each incidence of operation outside the operational ranges, including date and time, cause, and corrective action taken, shall be recorded and kept on site. Exceedance of operational range shall not be considered a violation of an emission limit of this permit, unless the exceedance is also accompanied by other information demonstrating that a violation of an emission limit has taken place. Reports of these incidences shall be submitted semiannually. If no incidences occurred during the reporting period then a letter shall indicate such. Any alternative method for monitoring control device performance must be preapproved by the Bureau and shall be incorporated into the permit as set forth in SC Regulation 61-62.70.7.
C.5	**Emission Unit ID:** 01 **Equipment ID:** B001 **Control Device ID:** SNCR, ESP For any source test required under an applicable standard or permit condition, the owner, operator, or representative shall comply with S.C. Regulation 61-62.1, Section IV - Source Tests. Unless approved otherwise by the Department, the owner, operator, or representative shall ensure that source tests are conducted while the source is operating at the maximum expected production rate or other production rate or operating parameter which would result in the highest emissions for

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Conditions
	the pollutants being tested. Some sources may have to spike fuels or raw materials to avoid being subjected to a more restrictive feed or process rate. Any source test performed at a production rate less than the rated capacity may result in permit limits on emission rates, including limits on production if necessary. The owner or operator shall comply with any limits that result from conducting a source test at less than rated capacity. A copy of the most recent Department issued source test summary letter, whether it imposes a limit or not, shall be maintained with the operating permit, for each source that is required to conduct a source test. Site-specific test plans and amendments, notifications, and source test reports shall be submitted to the Manager of the Source Evaluation Section, Bureau of Air Quality.
C.6	**Emission Unit ID:** Facility Wide **Equipment ID:** Facility Wide **Control Device ID:** Facility Wide **Limits:** (S.C. Regulation 61-62.1, Section II.E) This facility is a potential major source for particulate matter (PM), particulate matter <10 Microns (PM_{10}), particulate matter <2.5 Microns ($PM_{2.5}$), nitrogen oxides (NO_x), carbon monoxide (CO) and hazardous air pollutants (HAP) emissions. The facility has agreed to federally enforceable operating limitations to limit its potential to emit to less than 10.0 tons per year for any single HAP emission and less than 25.0 tons per year for any combination of HAP emissions and less than 250.0 tons per year for PM, PM_{10}, $PM_{2.5}$, NO_x, and CO emissions to avoid S.C. Regulation 61.62.5, Standard 7 – Prevention of Significant Deterioration (PSD), and major source MACT requirements under 40 CFR Part 63 and S.C. Regulation 61-62.63. **Monitoring/Record Keeping/Reporting/Other:** The owner/operator shall maintain NO_x and CO CEMs records, COM records, production records, and any other records necessary to determine facility wide emissions. PM, PM_{10}, $PM_{2.5}$, NO_x, CO, and HAP emissions shall be calculated on a monthly basis, and a twelve-month rolling sum shall be calculated for total PM, PM_{10}, $PM_{2.5}$, NO_x, CO, single HAP, and combined HAP emissions using the calculations and emission factors in Attachment - Algorithms. Emissions from startups, shutdowns, and malfunctions are required to be quantified and included in the calculations. The twelve-month rolling sum shall be less than 10.0 tons for single HAP, less than 25.0 tons for combined HAP, and less than 250.0 tons for each of PM, PM_{10}, $PM_{2.5}$, NO_x, and CO pollutants. Reports of the calculated values and the twelve-month rolling sum, calculated for each month in the reporting period based on the emission factors, operating parameters, and algorithms in the Attachment-Algorithms, shall be submitted semiannually. The source tests required by SC Regulation 61-62.5, Standard No. 1 and 40 CFR 63, Subpart JJJJJJ will be used to verify emission factors for PM, PM_{10}, and $PM_{2.5}$ listed in Attachment-Algorithms. The owner or operator shall develop new emission factors and update its algorithm for evaluating compliance with

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS
(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Conditions
	applicable synthetic minor limits if the results for PM, PM_{10}, $PM_{2.5}$ exceed the currently used emission factor. This information shall be submitted with the source test summary. The source tests required in Conditions C.20 and C.21 will be used to verify or reestablish emission factors for HCl and formaldehyde listed in Attachment-Algorithms. The owner or operator shall develop new emission factors and update its algorithm for evaluating compliance with applicable synthetic minor limits if the results for HCl or formaldehyde exceed the currently used emission factor. This information shall be submitted with the source test summary. The algorithm including example calculations and emission factors, explaining the method used to determine emission rates and the 12 month rolling sums is listed in Attachment – Algorithms.
C.7	**Emission Unit ID:** 01 **Equipment ID:** B001 **Control Device ID:** ESP **Limits:** (S.C. Regulation 61-62.5, Standard No. 1, Section I) The fuel burning source shall not discharge into the ambient air smoke which exceeds opacity of 20%. The opacity limit may be exceeded for sootblowing, but may not be exceeded for more than 6 minutes in a one hour period nor be exceeded for more than a total of 24 minutes in a 24 hour period. Emissions caused by sootblowing shall not exceed an opacity of 60%. Owners and operators shall, to the extent practicable, maintain and operate any source including associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions. In addition, the owner or operator shall maintain a log of the time, magnitude, duration, and any other pertinent information to determine periods of startup and shutdown and make available to the Department upon request. In order to minimize emissions during startup and shutdown, the facility shall operate the ESP during boiler startup once the ESP inlet gas temperature reaches greater than 270°F degrees Fahrenheit and an oxygen content at the boiler gas outlet of greater than 2% and less than 11%. During boiler shutdown, the ESP shall remain in operation until the ESP inlet gas temperature reaches less than 270°F or the oxygen content at the boiler gas outlet is greater than 11%. In case of a sudden unexpected loss of power, the ESP will be restarted as soon as practical. **Monitoring/Record Keeping/Reporting/Other:** (S.C. Regulation 61-62.5, Standard No. 1, Section IV(A)(2)) The owner or operator shall continue to operate and maintain a continuous opacity monitor (COM). The owner or operator shall use the COM monitoring, recordkeeping and reporting required by 40 CFR §60.48b and 40 CFR §60.49b:

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Conditions
	(40 CFR §60.48b(e)) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems. (40 CFR §60.48b(e)(1)) For affected facilities combusting coal, wood or municipal-type solid waste, the span value for a COMS shall be between 60 and 80 percent. (40 CFR §60.49b(f)) For an affected facility subject to the opacity standard in §60.43b, the owner or operator shall maintain records of opacity. (40 CFR §60.49b(d)(2)) The owner or operator shall record and maintain records of the amount of each fuel combusted during each calendar month. (40 CFR §60.49b(h)) The owner or operator subject to the opacity standards in §60.43b(f) is required to submit excess emission reports for any excess emissions that occurred during the reporting period. (40 CFR §60.49b(w)) The reporting period for the reports required under this subpart is each 6 month period. All reports shall be submitted to the Department and shall be postmarked by the 30th day following the end of the reporting period.
C.8	**Emission Unit ID:** 01 **Equipment ID:** B001 **Control Device ID:** ESP **Limits:** (S.C. Regulation 61-62.5, Standard No. 1, Section II) The maximum allowable discharge of particulate matter resulting from this source is 0.6 pounds per million BTU input. **Testing:** SC Regulation 61-62.5, Standard No. 1 requires a PM source test every two (2) years after the initial source test or as required by permit conditions. This requirement shall be subsumed by the PM testing required by 40 CFR 63, Subpart JJJJJJ, National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters at Area Sources. Should the applicability to Subpart JJJJJJ change or if the testing requirements of Subpart JJJJJJ are modified to be less stringent, the permit may be revised to require Standard No. 1 testing on a more frequent basis. All source tests should be completed to ensure the results are acceptable for use in demonstrating compliance with Standard No. 1 allowable PM emission limits.
C.9	**Emission Unit ID:** 01 **Equipment ID:** B001 **Control Device ID:** ESP **Limits:** (S.C. Regulation 61-62.5, Standard No. 1, Section III) The maximum allowable discharge of sulfur dioxide (SO_2) resulting from this source is 2.3 pounds per million BTU input.

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS
(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Conditions
	Monitoring: A new fuel analysis will be required if a new fuel (any fuel not already authorized by permit or by approval of the Department) is added to the allowable fuels. The new fuel analysis shall be maintained on site and made available to the Department upon request.
C.10	**Emission Unit ID:** 02, 04, 05 **Equipment ID:** CT, DSS, AS **Control Device ID:** None **Limits:** (S.C. Regulation 61-62.5, Standard No. 4, Section IX) Where construction or modification began after December 31, 1985, emissions from this source (including fugitive emissions) shall not exhibit an opacity greater than 20%. **Monitoring:** The owner/operator shall perform a visual inspection on a weekly basis during source operation. Logs shall be kept to record all visual inspections, noting color, duration, density (heavy or light), cause, and corrective action taken for any abnormal emissions. If a source did not operate during the required visual inspection time frame, the log shall indicate such. The owner/operator shall submit semiannual reports. The report shall include records of abnormal emissions (presence of any visible emissions), if any, and corrective actions taken. If the unit did not operate during the semiannual period, the report shall state so. Visual inspection means a qualitative observation of opacity during daylight hours. The observer does not need to be certified to conduct valid visual inspections. However, at a minimum, the observer should be trained and knowledgeable about the effects on visibility of emissions caused by background contrast, ambient lighting, and observer position relative to lighting, wind, and the presence of uncombined water.
C.11	**Emission Unit ID:** 02, 04, 05 **Equipment ID:** CT, DSS, AS **Control Device ID:** None **Limits:** (S.C. Regulation 61-62.5, Standard No. 4, Section VIII) Particulate matter emissions shall be limited to the rate specified by use of the following equations: For process weight rates less than or equal to 30 tons per hour $E = (F)\ 4.10P^{0.67}$ and For process weight rates greater than 30 tons per hour $E = (F)\ 55.0P^{0.11} - 40$ Where E = the allowable emission rate in pounds per hour P = process weight rate in tons per hour F = effect factor from Table B in S.C. Regulation 61-62.5, Standard No. 4 For the purposes of compliance with this condition, the process boundaries are defined as follows:

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

<table>
<tr><th>Condition Number</th><th>Conditions</th></tr>
<tr><td></td><td>
<table>
<tr><th>Process/Equipment IDs</th><th>Max Process Weight Rate (ton/hr)</th></tr>
<tr><td>Cooling Tower / CT</td><td>4411</td></tr>
<tr><td>Dry Sorbent Silo / DSS</td><td>7</td></tr>
<tr><td>Ash Silo / AS</td><td>0.25</td></tr>
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</td></tr>
<tr><td>C.12</td><td>
Emission Unit ID: 01
Equipment ID: B001
Control Device ID: SNCR

Limits: (S.C. Regulation 61-62.5, Standard No. 5.2, Section III) The allowable discharge of NO_X resulting from this source is 0.20 lb/Million Btu.

Monitoring/Record Keeping/Reporting/Other: (S.C. Regulation 61-62.5, Standard No. 5.2, Section IV(1)) CEMS:

The facility shall continue to operate, maintain, and monitor the NOx CEMs in accordance with the Department approved site specific CEMs monitoring plan dated October 4, 2013.

(S.C. Regulation 61-62.5, Standard No. 5.2, Section IV(3)) The owner or operator shall record monthly records of the amounts and types of each fuel combusted and maintain these records on site. Resinated wood pellets and chipped or ground resinated wood shall be differentiated from other wood waste in these records.

(S.C. Regulation 61-62.5, Standard No. 5.2, Section IV(5)) The owner or operator shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected source; any malfunction of the air pollution control equipment; and any periods during which a continuous monitoring system or monitoring device is inoperative.
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<tr><td>C.13</td><td>
Emission Unit ID: 01
Equipment ID: B001
Control Device ID: ESP

This source is subject to New Source Performance Standards (NSPS), 40 CFR 60 Subpart A, General Provisions and Subpart Db, Standards Of Performance For Industrial-Commercial-Institutional Steam Generating Units, and S.C. Regulation 61-62.60 Subparts A and Db, Standards Of Performance For Industrial-Commercial-Institutional Steam Generating Units, as applicable. This source shall comply with all applicable requirements of Subparts A and Db.

Limits: (40 CFR §60.43b(h)(1)) No owner or operator of an affected facility that commenced construction, reconstruction, or modification after February 28, 2005, and that combusts wood, a
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C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS
(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Conditions
	mixture of these fuels shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 13 ng/J (0.030 lb/MMBtu) heat input. (40 CFR §60.43b(f)) No owner or operator of an affected facility that combusts wood shall cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. (40 CFR §60.43b(g)) The PM and opacity standards apply at all times, except during periods of startup, shutdown, or malfunction. **Monitoring:** (40 CFR §60.48b(a)) The owner or operator of an affected facility subject to the opacity standard under §60.43b shall install, calibrate, maintain, and operate a continuous opacity monitoring systems (COMS) for measuring the opacity of emissions discharged to the atmosphere and record the output of the system. (40 CFR §60.48b(e)) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems. (40 CFR §60.48b(f)) For an affected facility subject to the opacity standard in §60.43b, the owner or operator shall maintain records of opacity. **Record Keeping:** (40 CFR §60.49b(d)(2)) The owner or operator shall record and maintain records of the amount of each fuel combusted during each calendar month. **Reporting:** (40 CFR §60.49b(h)) The owner or operator subject to the opacity standards in §60.43b(f) is required to submit excess emission reports for any excess emissions defined as all 6-minute periods during which the average opacity exceeds the opacity standards under §60.43b(f) that occurred during the reporting period. (40 CFR §60.49b(w)) The reporting period for the reports required under this subpart is each 6 month period. All reports shall be submitted to the Department and shall be postmarked by the 30th day following the end of the reporting period.
C.14	**Emission Unit ID:** 01 **Equipment ID:** B001 **Control Device ID:** NA The owner or operator of the boiler shall install, calibrate, maintain, and operate a CEMS for measuring CO concentrations discharged to the atmosphere from the boiler and record the output of the system. CO continuous monitoring systems required shall be operated and monitored in accordance with the provisions of the facility's Department approved site specific CEMs monitoring plan dated October 4, 2013.

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Conditions
C.15	**Emission Unit ID:** Facility Wide **Equipment ID:** Facility Wide **Control Device ID:** NA (S.C. Regulation 61-62.6) Fugitive particulate matter (PM) emissions from material handling, process equipment, or storage piles will be minimized to the maximum extent possible. The owner or operator shall continue to comply with the following fugitive dust plan: A. Unpaved Roads and Parking Areas: All unpaved roads shall be sprayed with dust retardant or water by an outside vendor or plant personnel as needed to keep potential fugitive dust to a minimum. (Oil will not be used.) The treatment dates will be recorded in the Computerized Maintenance Management System. B. Paved Roads and Parking Areas: All paved roads and working areas will be periodically swept or sprayed down with water to minimize fugitive dust generation. The preventive tasks will be recorded in the Computerized Maintenance Management System. C. Management of Security Gates: All plant gates other than the main entrance shall be locked at all times except during short durations of special deliveries or emergency situations to minimize dust generations. D. Traffic Speeds: Vehicular Traffic on all plant roadways shall be limited to a maximum speed of less than 10 miles per hour and posted near the plant entrance. E. Ash Handling: Fly-ash from the ash collection system shall be unloaded via a conditioner into trucks. Bottom ash will be treated with water and stored in a three-sided bunker prior to loading into ash trucks. F. Use of Covered Trucks: All incoming trucks carrying fuel shall be covered as well as all outgoing ash trucks. G. Loading and Unloading Operations: All conveyors that handle wood chips shall be covered. The facility shall submit an updated fugitive dust plan for Department approval if the Department or facility determines additional control measures are needed or current dust control measures need modification.
C.16	**Emission Unit ID:** 01 **Equipment ID:** B001 **Control Device ID:** ESP (S.C. Regulation 61-62.5, Standard 3, Section I.J.2) The combustion of the resinated wood pellets and chipped or ground resinated wood in the boiler has been granted a renewable energy exemption. This exemption was granted based on the information submitted by the owner/operator on December 22, 2016 and received by the Department on December 28, 2016. The owner/operator shall notify the Department if any pertinent information changes so that the exemption can be re-assessed.

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS

(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Conditions
C.17	**Emission Unit ID:** 01 **Equipment ID:** B001 **Control Device ID:** ESP, SNCR This boiler is permitted to burn only clean wood as defined in S.C. Regulation 61-62.1, chipped wood pallet and crate material, wood pellets made from resinated wood, chipped or ground resinated wood, and wood from natural disasters such as ice storms, tornado/wind storms, or floods. Fuels that meet the definition of yard waste are not permitted to be used as fuel. The use of any other substances as fuel is prohibited without written approval by the Department. A construction permit may be required depending on the nature of the fuel and potential emissions. (40 CFR 60.2175(v)) For operating units that combust non-hazardous secondary materials that have been determined not to be solid waste pursuant to 40 CFR 241.3(b)(1) of this chapter, you must keep a record which documents how the secondary material meets each of the legitimacy criteria under 40 CFR 241.3(d)(1). If you combust a fuel that has been processed from a discarded non-hazardous secondary material pursuant to §241.3(b)(4) of this chapter, you must keep records as to how the operations that produced the fuel satisfies the definition of processing in §241.2 and each of the legitimacy criteria of §241.3(d)(1) of this chapter. The facility shall sample the fuel burned for the chlorine content during the biennial source test required in Condition C.21. Records of the chlorine concentration of the fuel combusted shall be included in the source test summary report.
C.18	**Emission Unit ID:** 01 **Equipment ID:** B001 **Control Device ID:** SNCR The source is subject to 40 CFR 64 Compliance Assurance Monitoring (CAM) based on oxides of nitrogen (NO_x) emission levels and use of controls to comply with S.C. Regulation 61-62.5, Standard No. 5.2, Section III. The Department has determined that the use of NO_x CEMS be designated as continuous compliance for NO_x permit limits and thereby exempts this source from CAM requirements. As such, the facility shall maintain the NO_x CEMS as required by S.C. Regulation 61-62.5, Standard No. 5.2, Section IV(A)(1). All limits to demonstrate continued compliance shall be based on the specified averaging times. Any reported exceedance of these limits is considered to be in non-compliance with the applicable standard.
C.19	**Emission Unit ID:** 01 **Equipment ID:** B001 **Control Device ID:** ESP (S.C. Regulation 61-62.1, Section II.J.2) The owner/operator shall monitor secondary power, as applicable, for each field of the ESP. Each monitored parameter above shall be recorded each shift

C. LIMITATIONS, MONITORING AND REPORTING CONDITIONS
(S.C. Regulation 61-62.1, Section II; S.C. Regulation 61-62.70.6.a.3.i.B)

Condition Number	Conditions
	during source operation for the ESP. The ESP shall be in place and operational as required by Condition C.7, except during periods of ESP malfunction or mechanical failure. Operational ranges for the monitored parameters have been established to ensure proper operation of the pollution control equipment. These operational ranges for the monitored parameters were derived from stack test data, vendor certification, and/or operational history and visual inspections, which demonstrate the proper operation of the equipment. The facility shall maintain the established ranges and supporting documentation for these monitored parameters. Operating ranges may be updated following submittal to the Director of the Air Permitting Division.
C.20	**Emission Unit ID:** 01 **Equipment ID:** B001 **Control Device ID:** ESP (S.C. Regulation 61-62.1, Section II.J.2) An initial source test to verify the emission factor(s) for HCl and formaldehyde shall be conducted within 180 days of using resinated wood or resinated wood pellets for the first time following the effective date of this permit. The maximum allowable percentage of heat input to the boiler attributable to combusting resinated wood and resinated wood pellets shall be determined during the source test. Percentage heat input from resinated wood and resinated wood pellets shall not exceed the maximum allowable level established during source testing. The monthly percentage of heat input attributable to combusting resinated wood and resinated wood pellets shall be recorded on a calendar month basis and shall not exceed the maximum percentage established during the source test. Reports of the calculated values for each calendar month in the reporting period based on the emission factors, operating parameters, and algorithms in the Attachment-Algorithms, shall be submitted semiannually. The source test shall be repeated each time the facility wishes to increase the maximum allowable percentage of heat input from resinated wood or resinated wood pellets.
C.21	**Emission Unit ID:** 01 **Equipment ID:** B001 (S.C. Regulation 61-62.1, Section II.J.2) A source test for HCl emissions shall be conducted on a biennial basis. The source test will be used to verify or reestablish the HCl emission factor.

D. NESHAP PERIODIC REPORTING SCHEDULE SUMMARY

NESHAP Part	NESHAP Subpart	Compliance Monitoring Report Submittal Frequency	Reporting Period	Report Due Date
63	ZZZZ (Emergency Engines see note 3 and 4)	N/A	N/A	N/A
63	JJJJJJ	Annual	January 1 – December 31	March 1 (See Note #5)

1. This table summarizes only the periodic compliance reporting schedule. Additional reports may be required. See specific NESHAP Subpart for additional reporting requirements and associated schedule.
2. This reporting schedule does not supersede any other reporting requirements including but not limited to 40 CFR Part 60, 40 CFR Part 61, 40 CFR Part 63, and/or Title V. The MACT reporting schedule may be adjusted to coincide with the Title V reporting schedule with prior approval from the Department in accordance with 40 CFR 63.10(a)(5). This request may be made 1 year after the compliance date for the associated MACT standard.
3. Facilities with emergency engines are not required to submit reports. Only facilities with non-certified, non-emergency engines are required to submit semiannual reports.
4. Facilities with emergency engines shall comply with the operations limits specified in 40 CFR 63.6640(f).
5. Each annual compliance certification report must be prepared no later than March 1 of the year immediately following the reporting period and kept in a readily-accessible location for inspector review. If a deviation has occurred during the year, each annual compliance certification report must be submitted along with the deviation report, and postmarked or delivered no later than March 15 of the year immediately following the reporting period.

E. NESHAP – CONDITIONS

Condition Number	Conditions
E.1	All NESHAP notifications and reports shall be sent to the Manager of the Air Toxics Section, South Carolina Department of Health and Environmental Control - Bureau of Air Quality.
E.2	All NESHAP notifications and the cover letter to periodic reports shall be sent to the United States Environmental Protection Agency (US EPA) at the following address or electronically as required by the specific subpart: **US EPA, Region 4** **Air, Pesticides and Toxics Management Division** **61 Forsyth Street SW** **Atlanta, GA 30303**
E.3	Emergency power generators less than or equal to 150 kilowatt (kW) rated capacity or greater than 150 kW rated capacity designated for emergency use only and operated a total of 500 hours per year or less for testing and maintenance with a method to record the actual hours of use such as an hour meter have been determined to be exempt from construction permitting requirements in accordance with South Carolina Regulation 61-62.1.

E. NESHAP – CONDITIONS

<table>
<tr><th>Condition Number</th><th>Conditions</th></tr>
<tr><td></td><td>If present, these sources shall still comply with the requirements of all applicable regulations including but not limited to the following:

New Source Performance Standards (NSPS) 40 CFR 60 Subpart A (General Provisions);
NSPS 40 CFR 60 Subpart IIII (Stationary Compression Ignition Internal Combustion Engines);
NSPS 40 CFR 60 Subpart JJJJ (Stationary Spark Ignition Internal Combustion Engines);
National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 63 Subpart A (General Provisions); and
NESHAP 40 CFR 63 Subpart ZZZZ (Stationary Reciprocating Internal Combustion Engines).</td></tr>
<tr><td>E.4</td><td>This facility has processes subject to the provisions of SC Regulation 61-62.63 and 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants, Subparts A and JJJJJJ, Industrial, Commercial and Institutional Boilers-Area Sources. Existing affected sources shall comply with the applicable provisions of Subparts A and JJJJJJ no later than the compliance date, unless otherwise noted. Any new affected sources shall comply with the requirements of these Subparts upon initial start-up unless otherwise noted.</td></tr>
<tr><td>E.5</td><td>(40 CFR §63.11201(a)) You must comply with each emission limit specified in Table 1 to this subpart that applies to your boiler:

<table>
<tr><th colspan="3">TABLE 1 TO SUBPART JJJJJJ OF PART 63--EMISSION LIMITS</th></tr>
<tr><td>If your boiler is in this subcategory</td><td>For the following Pollutants</td><td>You must achieve less than or equal to the following emission limits, except during periods of startup and shut down.</td></tr>
<tr><td>3. New biomass-fired boilers with input capacity of 30 MMBtu/hr or greater that do not meet the definition of seasonal boiler or limited-use boiler.</td><td>PM (Filterable)</td><td>3.0E-02 lb per MMBtu of heat input.</td></tr>
</table></td></tr>
</table>

E. NESHAP – CONDITIONS

<table>
<tr><th>Condition Number</th><th>Conditions</th></tr>
<tr><td>E.6</td><td>(40 CFR §63.11201(b)) You must comply with each work practice standard, emission reduction measure, and management practice specified in Table 2 to this subpart that applies to your boiler:
<table>
<tr><th colspan="2">TABLE 2 TO SUBPART JJJJJJ OF PART 63--WORK PRACTICE STANDARDS, EMISSION REDUCTION MEASURES, AND MANAGEMENT PRACTICES</th></tr>
<tr><th>If your boiler is in this subcategory</th><th>You must meet the following</th></tr>
<tr><td>1. New Biomass Fired Boilers</td><td>Minimize the boiler's startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures. If manufacturer's recommended procedures are not available, you must follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available.</td></tr>
<tr><td>7. New biomass-fired boilers that do not meet the definition of seasonal boiler or limited-use boiler, or use an oxygen trim system that maintains an optimum air-to-fuel ratio.</td><td>Conduct a tune-up of the boiler every 5 years as specified in §63.11223.</td></tr>
</table></td></tr>
<tr><td>E.7</td><td>(40 CFR §63.11201(c)) You must comply with each operating limit specified in Table 3 to this subpart that applies to your boiler:
<table>
<tr><th colspan="2">TABLE 3 TO SUBPART JJJJJJ OF PART 63--OPERATING LIMITS FOR BOILERS WITH EMISSION LIMITS</th></tr>
<tr><td>2. Electrostatic precipitator control.</td><td>a. Maintain opacity to less than or equal to 10 percent opacity (daily block average)</td></tr>
<tr><td>7. Performance Stack Testing</td><td>For boilers that demonstrate compliance with a performance stack test, maintain the operating load of each unit such that it does not exceed 110 percent of the average operating load recorded during the most recent performance stack test.</td></tr>
</table></td></tr>
<tr><td>E.8</td><td>(40 CFR §63.11205) What Are My General Requirements For Complying With This Subpart?

(a) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.</td></tr>
</table>

E. NESHAP – CONDITIONS

Condition Number	Conditions
	(b) You must demonstrate compliance with all applicable emission limits using performance stack testing, continuous monitoring system (CMS), a continuous opacity monitoring system (COMS), and a continuous parameter monitoring system (CPMS), where applicable. (c) If you demonstrate compliance with any applicable emission limit through performance stack testing and subsequent compliance with a COMS and a CPMS, you must develop a site-specific monitoring plan according to the requirements in paragraphs (c)(1) through (3) of this section for the use of any COMS and CPMS. (c)(1) For each CMS required in this section (including (COMS, or CPMS), you must develop, and submit to the Administrator for approval upon request, a site-specific monitoring plan that addresses paragraphs (c)(1)(i) through (vi) of this section. You must submit this site-specific monitoring plan, if requested, at least 60 days before your initial performance evaluation of your CMS. (c)(1)(i) Installation of the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device); (c)(1)(ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems; and (c)(1)(iii) Performance evaluation procedures and acceptance criteria (e.g., calibrations). (c)(1)(iv) Ongoing operation and maintenance procedures in accordance with the general requirements of §63.8(c)(1)(ii), (c)(3), and (c)(4)(ii); (c)(1)(v) Ongoing data quality assurance procedures in accordance with the general requirements of §63.8(d); and (c)(1)(vi) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of §63.10(c) (as applicable in Table 8 to this subpart), (e)(1), and (e)(2)(i). (c)(2) You must conduct a performance evaluation of the CMS in accordance with your site-specific monitoring plan. (c)(3) You must operate and maintain the CMS in continuous operation according to the site-specific monitoring plan.
E.9	40 CFR §63.11220(a) (S.C. Regulation 61-62.5, Standard No. 1, Section VI subsumed) If your boiler has a heat input capacity of 10 million Btu per hour or greater, you must conduct all applicable performance (stack) tests according to §63.11212 on a triennial basis, except as specified in

E. NESHAP – CONDITIONS

Condition Number	Conditions
	paragraphs (b) through (e) of this section. Triennial performance tests must be completed no more than 37 months after the previous performance test.
E.10	40 CFR §63.11221 Is There A Minimum Amount Of Monitoring Data I Must Obtain? (a) You must monitor and collect data according to this section and the site-specific monitoring plan required by §63.11205(c). (b) You must operate the monitoring system and collect data at all required intervals at all times the affected source is operating and compliance is required, except for periods of monitoring system malfunctions or out-of-control periods (see §63.8(c)(7) of this part), repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in your site-specific monitoring plan. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to complete monitoring system repairs in response to monitoring system malfunctions or out-of-control periods and to return the monitoring system to operation as expeditiously as practicable. (c) You may not use data collected during periods of startup and shutdown, monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or quality control activities in calculations used to report emissions or operating levels. Any such periods must be reported according to the requirements in §63.11225. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system. (d) Except for periods of monitoring system malfunctions or monitoring system out-of-control periods, repairs associated with monitoring system malfunctions or monitoring system out-of control periods, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in your site-specific monitoring plan), failure to collect required data is a deviation of the monitoring requirements.

E. NESHAP – CONDITIONS

<table>
<tr><th>Condition Number</th><th>Conditions</th></tr>
<tr><td>E.11</td><td>
40 CFR §63.11222 How Do I Demonstrate Continuous Compliance With The Emission Limits?

(a) You must demonstrate continuous compliance with each emission limit and operating limit in Tables 1 and 3 to this subpart that applies to you according to the methods specified in Table 7 to this subpart and to paragraphs (a)(1) of this section.

<table>
<tr><th colspan="2">TABLE 7 TO SUBPART JJJJJJ OF PART 63--DEMONSTRATING CONTINUOUS COMPLIANCE</th></tr>
<tr><td>1. Opacity.....</td><td>a. Collecting the opacity monitoring system data according to §63.11224(e) and §63.11221; and

b. Reducing the opacity monitoring data to 6-minute averages; and

c. Maintaining opacity to less than or equal to 10 percent (daily block average).</td></tr>
</table>

(a)(1) you must continuously monitor the operating parameters. Operation above the established maximum, below the established minimum, or outside the allowable range of the operating limits specified in paragraph (a) of this section constitutes a deviation from your operating limits established under this subpart, except during performance tests conducted to determine compliance with the emission and operating limits or to establish new operating limits. Operating limits are confirmed or reestablished during performance tests.

(a)(2) If you have an applicable PM emission limit, you must keep records of the type and amount of all fuels burned in each boiler during the reporting period.

(b) You must report each instance in which you did not meet each emission limit and operating limit in Tables 1 and 3 to this subpart that apply to you. These instances are deviations from the emission limits in this subpart. These deviations must be reported according to the requirements in §63.11225.
</td></tr>
<tr><td>E.12</td><td>
40 CFR §63.11223 How Do I Demonstrate Continuous Compliance With The Work Practice And Management Practice Standards?

(a) For affected sources subject to the work practice standard or the management practices of a tune-up, you must conduct a performance tune-up according to paragraph (b) of this section and keep records as required in §63.11225(c) to demonstrate continuous compliance. You must conduct the tune-up while burning the type of fuel (or fuels in the case of boilers that routinely burn two types of fuels at the same time) that provided the majority of the heat input to the boiler over the 12 months prior to the tune-up.

(b) Except as specified in paragraphs (c) through (f) of this section, you must conduct a tune-up of the boiler biennially to demonstrate continuous compliance as specified in paragraphs (b)(1) through (7)
</td></tr>
</table>

E. NESHAP – CONDITIONS

Condition Number	Conditions
	of this section. Each biennial tune-up must be conducted no more than 25 months after the previous tune-up. (b)(1) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may delay the burner inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection). Units that produce electricity for sale may delay the burner inspection until the first outage, not to exceed 36 months from the previous inspection. (b)(2) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available. (b)(3) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection. (b)(4) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any nitrogen oxide requirement to which the unit is subject. (b)(5) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. (b)(6) Maintain on-site and submit, if requested by the Administrator, a report containing the information in paragraphs (b)(6)(i) through (iii) of this section. (b)(6)(i) The concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler. (b)(6)(ii) A description of any corrective actions taken as a part of the tune-up of the boiler. (b)(6)(iii) The type and amount of fuel used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit. (b)(7) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted

E. NESHAP – CONDITIONS

Condition Number	Conditions
	within 30 days of startup. (c) Boilers with an oxygen trim system that maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up must conduct a tune-up of the boiler every 5 years as specified in paragraphs (b)(1) through (7) of this section. Each 5-year tune-up must be conducted no more than 61 months after the previous tune-up. For a new or reconstructed boiler with an oxygen trim system, the first 5- year tune-up must be no later than 61 months after the initial startup. You may delay the burner inspection specified in paragraph (b)(1) of this section and inspection of the system controlling the air-to-fuel ratio specified in paragraph (b)(3) of this section until the next scheduled unit shutdown, but you must inspect each burner and system controlling the air-to-fuel ratio at least once every 72 months. If an oxygen trim system is utilized on a unit without emission standards to reduce the tune-up frequency to once every 5 years, set the oxygen level no lower than the oxygen concentration measured during the most recent tune-up. (g) If you own or operate a boiler subject to emission limits in Table 1 of this subpart, you must minimize the boiler's startup and shutdown periods following the manufacturer's recommended procedures, if available. If manufacturer's recommended procedures are not available, you must follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available. You must submit a signed statement in the Notification of Compliance Status report that indicates that you conducted startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available.
E.13	40 CFR §63.11224 What Are My Monitoring, Installation, Operation, And Maintenance Requirements? (c) If you demonstrate compliance with any applicable emission limit through stack testing and subsequent compliance with operating limits, you must develop a site-specific monitoring plan according to the requirements in paragraphs (c)(1) through (4) of this section. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under §63.8(f). (c)(1) For each CMS required in this section, you must develop, and submit to the EPA Administrator for approval upon request, a site-specific monitoring plan that addresses paragraphs (c)(1)(i) through (iii) of this section. You must submit this site-specific monitoring plan (if requested) at least 60 days before your initial performance evaluation of your CMS. (c)(1)(i) Installation of the CMS sampling probe or other interface at a measurement location relative to each affected unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device). (c)(1)(ii) Performance and equipment specifications for the sample interface, the pollutant

E. NESHAP – CONDITIONS

Condition Number	Conditions
	concentration or parametric signal analyzer, and the data collection and reduction systems. (c)(1)(iii) Performance evaluation procedures and acceptance criteria (e.g., calibrations). (c)(2) In your site-specific monitoring plan, you must also address paragraphs (c)(2)(i) through (iii) of this section. (c)(2)(i) Ongoing operation and maintenance procedures in accordance with the general requirements of §63.8(c)(1), (3), and (4)(ii). (c)(2)(ii) Ongoing data quality assurance procedures in accordance with the general requirements of §63.8(d). (c)(2)(iii) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of §63.10(c), (e)(1), and (e)(2)(i). (c)(3) You must conduct a performance evaluation of each CMS in accordance with your site-specific monitoring plan. (c)(4) You must operate and maintain the CMS in continuous operation according to the site-specific monitoring plan. (d) If you have an operating limit that requires the use of a CMS, you must install, operate, and maintain each CPMS according to the procedures in paragraphs (d)(1) through (4) of this section. (d)(1) The CPMS must complete a minimum of one cycle of operation every 15 minutes. You must have data values from a minimum of four successive cycles of operation representing each of the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed, to have a valid hour of data. (d)(2) You must calculate hourly arithmetic averages from each hour of CPMS data in units of the operating limit and determine the 30-day rolling average of all recorded readings, except as provided in §63.11221(c). Calculate a 30-day rolling average from all of the hourly averages collected for the 30-day operating period using Equation 3 of this section. $$\text{30-day average} = \frac{\Sigma_{i=1}^{n} Hpvi}{n} \quad \text{(Eq. 3)}$$ Where:

E. NESHAP – CONDITIONS

Condition Number	Conditions
	Hpvi = the hourly parameter value for hour i n = the number of valid hourly parameter values collected over 30 boiler operating days (d)(3) For purposes of collecting data, you must operate the CPMS as specified in §63.11221(b). For purposes of calculating data averages, you must use all the data collected during all periods in assessing compliance, except that you must exclude certain data as specified in §63.11221(c). Periods when CPMS data are unavailable may constitute monitoring deviations as specified in §63.11221(d). (d)(4) Record the results of each inspection, calibration, and validation check. (e) If you have an applicable opacity operating limit under this rule, you must install, operate, certify and maintain each COMS according to the procedures in paragraphs (e)(1) through (8) of this section by the compliance date specified in §63.11196. (e)(1) Each COMS must be installed, operated, and maintained according to Performance Specification 1 of 40 CFR part 60, appendix B. (e)(2) You must conduct a performance evaluation of each COMS according to the requirements in §63.8 and according to Performance Specification 1 of 40 CFR part 60, appendix B. (e)(3) As specified in §63.8(c)(4)(i), each COMS must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period. (e)(4) The COMS data must be reduced as specified in §63.8(g)(2). (e)(5) You must include in your site-specific monitoring plan procedures and acceptance criteria for operating and maintaining each COMS according to the requirements in §63.8(d). At a minimum, the monitoring plan must include a daily calibration drift assessment, a quarterly performance audit, and an annual zero alignment audit of each COMS. (e)(6) You must operate and maintain each COMS according to the requirements in the monitoring plan and the requirements of §63.8(e). You must identify periods the COMS is out of control including any periods that the COMS fails to pass a daily calibration drift assessment, a quarterly performance audit, or an annual zero alignment audit. (e)(7) You must calculate and record 6-minute averages from the opacity monitoring data and determine and record the daily block average of recorded readings, except as provided in §63.11221(c).

E. NESHAP – CONDITIONS

Condition Number	Conditions
	(e)(8) For purposes of collecting opacity data, you must operate the COMS as specified in §63.11221(b). For purposes of calculating data averages, you must use all the data collected during all periods in assessing compliance, except that you must exclude certain data as specified in §63.11221(c). Periods when COMS data are unavailable may constitute monitoring deviations as specified in §63.11221(d).
E.14	40 CFR §63.11225 What Are My Notification, Reporting, And Recordkeeping Requirements? (a) You must submit the notifications specified in paragraphs (a)(1) and (a)(3) of this section to the Administrator. (a)(1) You must submit all of the notifications in §§63.7(b) and 63.8(e). (a)(3) If you are required to conduct a performance stack test you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance stack test is scheduled to begin. (b) You must prepare, by March 1 of each year, and submit to the delegated authority upon request, an annual compliance certification report for the previous calendar year containing the information specified in paragraphs (b)(1) through (3) of this section. You must submit the report by March 15 if you had any instance described by paragraph (b)(3) of this section. (b)(1) Company name and address. (b)(2) Statement by a responsible official, with the official's name, title, phone number, email address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of this subpart. Your notification must include the following certification(s) of compliance, as applicable, and signed by a responsible official: (b)(2)(i) "This facility complies with the requirements in §63.11223 to conduct a biennial or 5-year tune-up, as applicable, of each boiler." (b)(2)(ii) For units that do not qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act: "No secondary materials that are solid waste were combusted in any affected unit." (b)(2)(iii) "This facility complies with the requirement in §§63.11214(d) and 63.11223(g) to minimize the boiler's time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available." (b)(3) If the source experiences any deviations from the applicable requirements during the reporting

E. NESHAP – CONDITIONS

Condition Number	Conditions
	period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken. (b)(4) The total fuel use by each affected boiler subject to an emission limit, for each calendar month within the reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by you or EPA through a petition process to be a non-waste under §241.3(c), whether the fuel(s) were processed from discarded non-hazardous secondary materials within the meaning of §241.3, and the total fuel usage amount with units of measure. (c) You must maintain the records specified in paragraphs (c)(1) through (7) of this section. (c)(1) As required in §63.10(b)(2)(xiv), you must keep a copy of each notification and report that you submitted to comply with this subpart and all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted. (c)(2) You must keep records to document conformance with the work practices, emission reduction measures, and management practices required by §63.11214 and §63.11223 as specified in paragraphs (c)(2)(i) through (vi) of this section. (c)(2)(i) Records must identify each boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned. (c)(2)(ii) For operating units that combust non-hazardous secondary materials that have been determined not to be solid waste pursuant to §241.3(b)(1) of this chapter, you must keep a record which documents how the secondary material meets each of the legitimacy criteria under §241.3(d)(1). If you combust a fuel that has been processed from a discarded non-hazardous secondary material pursuant to §241.3(b)(4) of this chapter, you must keep records as to how the operations that produced the fuel satisfies the definition of processing in §241.2 and each of the legitimacy criteria in §241.3(d)(1) of this chapter. If the fuel received a non-waste determination pursuant to the petition process submitted under §241.3(c) of this chapter, you must keep a record that documents how the fuel satisfies the requirements of the petition process. For operating units that combust non-hazardous secondary materials as fuel per §241.4, you must keep records documenting that the material is a listed non-waste under §241.4(a). (c)(2)(iv) For each boiler subject to an emission limit in Table 1 to this subpart, you must keep records of monthly fuel use by each boiler, including the type(s) of fuel and amount(s) used. (c)(4) Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment. (c)(5) Records of actions taken during periods of malfunction to minimize emissions in accordance

E. NESHAP – CONDITIONS

Condition Number	Conditions
	with the general duty to minimize emissions in §63.11205(a), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation. (c)(6) You must keep the records of all inspection and monitoring data required by §§63.11221 and 63.11222, and the information identified in paragraphs (c)(6)(i) through (vi) of this section for each required inspection or monitoring. (c)(6)(i) The date, place, and time of the monitoring event. (c)(6)(ii) Person conducting the monitoring. (c)(6)(iii) Technique or method used. (c)(6)(iv) Operating conditions during the activity. (c)(6)(v) Results, including the date, time, and duration of the period from the time the monitoring indicated a problem to the time that monitoring indicated proper operation. (c)(6)(vi) Maintenance or corrective action taken (if applicable). (d) Your records must be in a form suitable and readily available for expeditious review. You must keep each record for 5 years following the date of each recorded action. You must keep each record on-site or be accessible from a central location by computer or other means that instantly provide access at the site for at least 2 years after the date of each recorded action. You may keep the records off site for the remaining 3 years. (e)(1) Within 60 days after the date of completing each performance test (as defined in §63.2) required by this subpart, you must submit the results of the performance tests, including any associated fuel analyses, following the procedure specified in either paragraph (e)(1)((ii) of this section. (e)(1)(ii) For data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT Web site at the time of the test, you must submit the results of the performance test to the Administrator at the appropriate address listed in §63.13.

F. COMPLIANCE SCHEDULE – RESERVED

G. PERMIT SHIELD

Condition Number	Conditions
G.1	No Shield Requested.

H. PERMIT FLEXIBILITY

Condition Number	Conditions
H.1	The facility may install, remove, and modify insignificant activities as defined in S.C. Regulation 61-62.70.5.c and exempt sources as listed in S.C. Regulation 61-62.1, Section II.B, without revising or reopening the Title V Operating Permit. A list of insignificant activities/exempt sources must be maintained on site, along with any necessary documentation to support the determination that the activity is insignificant and/or exempt, and shall be made available to a Department representative upon request. The list shall be submitted with the next renewal application.

I. AMBIENT AIR STANDARDS REQUIREMENTS

Condition Number	Conditions
I.1	Air dispersion modeling (or other method) has demonstrated that this facility's operation will not interfere with the attainment and maintenance of any state or federal ambient air standard. Any changes in the parameters used in this demonstration may require a review by the facility to determine continuing compliance with these standards. These potential changes include any decrease in stack height, decrease in stack velocity, increase in stack diameter, decrease in stack exit temperature, increase in building height or building additions, increase in emission rates, decrease in distance between stack and property line, changes in vertical stack orientation, and installation of a rain cap that impedes vertical flow. Parameters that are not required in the determination will not invalidate the demonstration if they are modified. The emission rates used in the determination are listed in Attachment - Emission Rates for Ambient Air Standards of this permit. Higher emission rates may be administratively incorporated into Attachment - Emission Rates for Ambient Air Standards of this permit provided a demonstration using these higher emission rates shows the attainment and maintenance of any state or federal ambient air quality standard or with any other applicable requirement. Variations from the input parameters in the demonstration shall not constitute a violation unless the maximum allowable ambient concentrations identified in the standard are exceeded. The owner/operator shall maintain this facility at or below the emission rates as listed in Attachment - Emission Rates for Ambient Air Standards, not to exceed the pollutant limitations of this permit. Should the facility wish to increase the emission rates listed in Attachment - Emission Rates for Ambient Air Standards, not to exceed the pollutant limitations in the body of this permit, it may do so by the administrative process specified above. This is a State Only enforceable requirement.

J. PERIODIC REPORTING SCHEDULE

Compliance Monitoring Report Submittal Frequency	Reporting Period (Begins on the effective date of the permit)	Report Due Date
Quarterly	January-March April-June July-September October-December	April 30 July 30 October 30 January 30
Semiannual	January-June April-September July-December October-March	July 30 October 30 January 30 April 30
Note: This reporting schedule does not supersede any federal reporting requirements including but not limited to 40 CFR Part 60, 40 CFR Part 61, and 40 CFR Part 63. All federal reports must meet the reporting time frames specified in the federal standard unless the Department or EPA approves a change.		

K. TITLE V COMPLIANCE CERTIFICATION REPORTING SCHEDULE

Title V Compliance Certification Submittal Frequency	Reporting Period (Begins on the effective date of the permit)	Report Due Date
Annual	January-December April-March July-June October-September	February 14 May 15 August 14 November 14

L. TITLE V RECORD KEEPING AND REPORTING REQUIREMENTS

Condition Number	Conditions
L.1	Reporting required in this permit, shall be submitted in a timely manner as directed in the Title V Periodic Reporting Schedule and the Title V Compliance Certification Reporting Schedule of this permit. All required reports must be certified by a responsible official consistent with S.C. Regulation 61-62.70.5.d.
L.2	All reports and notifications required under this permit shall be submitted to the person indicated in the specific condition at the following address: **2600 Bull Street** **Columbia, SC 29201** The contact information for the local Environmental Affairs Regional office can be found at: **http://www.scdhec.gov**

L. TITLE V RECORD KEEPING AND REPORTING REQUIREMENTS

Condition Number	Conditions
L.3	Unless elsewhere specified within this permit, all reports required under this permit shall be submitted to the Manager of the Technical Management Section, Bureau of Air Quality.
L.4	All Title V Annual Compliance Certifications shall be sent to the US EPA, Region 4, Air Enforcement Branch and to the Manager of the Technical Management Section, Bureau of Air Quality. **US EPA, Region 4** **Air Enforcement Branch** **61 Forsyth Street SW** **Atlanta, GA 30303**
L.5	(S.C. Regulation 61-62.70.6.a.3.ii) The owner or operator shall comply, where applicable, with the following monitoring/support information collection and retention record keeping requirements: 1. Records of required monitoring information shall include the following: a. The date, place as defined in the permit, and time of sampling or measurements; b. The date(s) analyses were performed; c. The company or entity that performed the analyses; d. The analytical techniques or methods used; e. The results of such analyses; and f. The operating conditions as existing at the time of sampling or measurement; 2. Records of all required monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.
L.6	(S.C. Regulation 61-62.1, Section II.J.1.c) For sources not required to have continuous emission monitors, any malfunction of air pollution control equipment or system, process upset, or other equipment failure which results in discharges of air contaminants lasting for one (1) hour or more and which are greater than those discharges described for normal operation in the permit application, shall be reported to the Department within twenty-four (24) hours after the beginning of the occurrence and a written report shall be submitted to the Department within thirty (30) days. The written report shall include, at a minimum, the following: 1. The identity of the stack and/or emission point where the excess emissions occurred; 2. The magnitude of excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the excess emissions; 3. The time and duration of excess emissions; 4. The identity of the equipment causing the excess emissions; 5. The nature and cause of such excess emissions; 6. The steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunction; 7. The steps taken to limit the excess emissions; and, 8. Documentation that the air pollution control equipment, process equipment, or processes were at all times maintained and operated, to the maximum extent practicable, in a manner

L. TITLE V RECORD KEEPING AND REPORTING REQUIREMENTS

Condition Number	Conditions
	consistent with good practice for minimizing emissions. The initial twenty-four (24) hour notification should be made to the Department's local Environmental Affairs Regional office. The written report should be sent to the Manager of the Technical Management Section, Bureau of Air Quality and the local Environmental Affairs Regional office.
L.7	(S.C. Regulation 61-62.70.6.c.5.iii) The responsible official shall certify, annually, compliance with the conditions of this permit as required under S.C. Regulation 61-62.70.6.c. The compliance certification shall include the following: 1. The identification of each term or condition of the permit that is the basis of the certification. 2. The identification of the method(s) or means used by the owner or operator for determining the compliance status with each term and condition of the permit during the certification period. 3. The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in S.C. Regulation 61-62.70.6.c.5.iii.B. The certification shall identify each deviation and take it into account in the compliance certification. 4. Such other facts as the Department may require to determine the compliance status of the source.
L.8	(S.C. Regulation 61-62.1, Section II.M) Within 30 days of the transfer of ownership/operation of a facility, the current permit holder and prospective new owner or operator shall submit to the Director of Engineering Services a written request for transfer of the source operating or construction permits. The written request for transfer of the source operating or construction permit shall include any changes pertaining to the facility name and mailing address; the name, mailing address, and telephone number of the owner or operator for the facility; and any proposed changes to the permitted activities of the source. Transfer of the operating or construction permits will be effective upon written approval by the Department.

M. GENERAL FACILITY WIDE

Condition Number	Conditions
M.1	The owner or operator shall comply with S.C. Regulation 61-62.2 "Prohibition of Open Burning."
M.2	The owner or operator shall comply with S.C. Regulation 61-62.3 "Air Pollution Episodes."
M.3	The owner or operator shall comply with S.C. Regulation 61-62.4 "Hazardous Air Pollution Conditions."
M.4	The owner or operator shall comply with S.C. Regulation 61-62.6 "Control of Fugitive Particulate Matter", Section III "Control of Fugitive Particulate Matter Statewide."
M.5	The owner or operator shall comply with the standards of performance for asbestos abatement

M. GENERAL FACILITY WIDE

Condition Number	Conditions
	operations pursuant to 40 CFR Part 61.145, including, but not limited to, requirements governing training, licensing, notification, work practice, cleanup, and disposal.
M.6	The owner or operator shall comply with the standards of performance for asbestos abatement operations pursuant to S.C. Regulation 61-86.1, including, but not limited to, requirements governing training, licensing, notification, work practice, cleanup, and disposal.
M.7	The owner or operator shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, Protection of Stratospheric Ozone, Recycling and Emissions Reduction, except as provided for motor vehicle air conditioners (MVACs) in Subpart B. If the owner or operator performs a service on motor (fleet) vehicles that involves ozone-depleting substance refrigerant in MVACs, the owner or operator is subject to all applicable requirements of 40 CFR Part 82, Subpart B, Servicing of MVACs.
M.8	(S.C. Regulation 61-62.70.6.a.5) The provisions of this permit are severable, and if any provision of this permit, or application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.
M.9	(S.C. Regulation 61-62.70.6.a.6.i) The owner or operator must comply with all of the conditions of this permit. Any permit noncompliance constitutes a violation of the S.C. Pollution Control Act and/or the Federal Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of permit renewal application.
M.10	(S.C. Regulation 61-62.70.6.a.6.ii) It shall not be a defense for an owner or operator in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
M.11	(S.C. Regulation 61-62.70.6.a.6.iii) The permit may be modified, revoked, reopened and reissued, or terminated for cause by the Department. The filing of a request by the owner or operator for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
M.12	(S.C. Regulation 61-62.70.6.a.6.iv) The permit does not convey any property rights of any sort, or any exclusive privilege.
M.13	(S.C. Regulation 61-62.70.6.a.6.v) The owner or operator shall furnish to the Department, within a reasonable time, any information that the Department may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the owner or operator shall also furnish to the Department copies of records required to be kept by the permit or, for information claimed to be confidential, the owner or operator may furnish such records directly to the Administrator along with a claim of confidentiality. The Department may also request that the owner or operator furnish such records directly to the Administrator along with a claim of confidentiality.
M.14	(S.C. Regulation 61-62.70.6.a.8) No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit.
M.15	(S.C. Regulation 61-62.70.6.c.2) Upon presentation of credentials and other documents as may be required by law, the owner or operator shall allow the Department or an authorized representative to

M. GENERAL FACILITY WIDE

Condition Number	Conditions
	perform the following: 1. Enter upon the owner or operator's premises where a Part 70 source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit. 2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. 3. Inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit. 4. As authorized by the Act and/or the S.C. Pollution Control Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.
M.16	(S.C. Regulation 61-62.70.6.g) In the case of an emergency, as defined in S.C. Regulation 61-62.70.6.g.1, the owner or operator shall demonstrate an affirmative defense of emergency through properly signed, contemporaneous operating logs, or other relevant evidence that: 1. An emergency occurred and that the owner or operator can identify the cause(s) of the emergency; 2. The permitted facility was at the time being properly operated; and 3. During the period of the emergency the owner or operator took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and 4. The owner or operator shall submit verbal notification of the emergency to the Department within twenty-four (24) hours of the time when emission limitations were exceeded, followed by written notifications within thirty (30) days. This notice fulfills the requirement of S.C. Regulation 61-62.70.6.a.3.iii.B. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. This provision is in addition to any emergency or upset provision contained in any applicable requirement. In any enforcement proceeding, the owner or operator seeking to establish the occurrence of an emergency has the burden of proof.
M.17	(S.C. Regulation 61-62.70.6.a.1.ii) Where an applicable requirement of the Act is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act, both provisions shall be incorporated into the permit and shall be enforceable by the Administrator.
M.18	(S.C. Regulation 61-62.70.6.a.4) According to S.C. Regulation 61-62.70.6.a.4, the owner or operator is prohibited from emissions exceeding any allowances that the source lawfully holds under Title IV of the Act or the regulations promulgated thereunder. No permit revision shall be required for increases in emissions that are authorized by allowances acquired pursuant to the acid rain program, provided that such increases do not require a permit revision under any other applicable requirement. No limit shall be placed on the number of allowances held by a source. The source may not, however, use allowances as a defense to noncompliance with any other applicable requirement. Any such allowances shall be accounted for according to the procedures established in regulations promulgated under Title IV of the Act.
M.19	(S.C. Regulation 61-62.70.7.c.1.ii) Permit expiration terminates the source's right to operate unless a

M. GENERAL FACILITY WIDE

Condition Number	Conditions
	timely and complete renewal application has been submitted consistent with S.C. Regulation 61-62.70.5.a.1.iii, 62.70.5.a.2.iv, and 62.70.7.b. In this case, the permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the permit including any permit shield that may be granted pursuant to S.C. Regulation 61-62.70.6.f shall remain in effect until the renewal permit has been issued or denied.
M.20	Requests for permit modification and amendments shall be submitted on the appropriate Department approved Title V Modification Form(s).
M.21	(S.C. Regulation 61-62.70.6.a.7) The owners or operators of Part 70 sources shall pay fees to the Department consistent with the fee schedule approved pursuant to S.C. Regulation 61-62.70.9. Failure to pay applicable fee can be considered grounds for permit revocation.
M.22	(S.C. Regulation 61-62.1, Section III) The owners or operators of Part 70 sources shall complete and submit a new updated emissions inventory consistent with the schedule approved pursuant to S.C. Regulation 61-62.1, Section III. These Emissions Inventory Reports shall be submitted to the Manager of the Emissions Inventory Section, Bureau of Air Quality. This requirement notwithstanding, an emissions inventory may be required at any time in order to determine the compliance status of any facility.
M.23	This permit expressly incorporates insignificant activities. Emissions from these activities shall be included in the emissions inventory submittals as required by S.C. Regulation 61-62.1, Section III.B.2.g.
M.24	(S.C. Regulation 61-62.1, Section II.J.1.a) No applicable law, regulation, or standard will be contravened.
M.25	(S.C. Regulation 61-62.1, Section II.J.1.e) Any owner or operator who constructs or operates a source or modification not in accordance with the application submitted pursuant to S.C. Regulation 61-62.1 or with the terms of any approval to construct, or who commences construction after the effective date of S.C. Regulation 61-62.1 without applying for and receiving approval hereunder, shall be subject to enforcement action.

ATTACHMENT - Emission Rates for Ambient Air Standards

Allendale Biomass, LLC
TV-0160-0022

The emission rates listed herein are not considered enforceable limitations but are used to evaluate ambient air quality impact. Until the Department makes a determination that a facility is causing or contributing to an exceedance of a state or federal ambient air quality standard, increases to these emission rates are not in themselves considered violations of these ambient air quality standards (see Ambient Air Standards Requirements).

AMBIENT AIR QUALITY STANDARDS – STANDARD NO. 2						
Emission Point ID	**Emission Rates (lbs/hr)**					
	PM_{10}	**$PM_{2.5}$**	**SO_2**	**NO_X**	**CO**	**Lead**
Ash	0.00275	0.00275	--	--	--	--
B1	9.42	9.42	7.85	62.8	64.4	--
CT1	0.15	0.15	--	--	--	--
CT2	0.15	0.15	--	--	--	--
Grinder/ScreenChipper	0.0108	0.0108	--	--	--	--
Trona	0.0015	0.0015	--	--	--	--

ATTACHMENT – Algorithms

Allendale Biomass, LLC
TV-0160-0022
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Boiler Operating Parameters
Boiler Rating 314 Million (MM) Btu/hr
Fuel: Woodwaste:

Heat content in Btu/lb = (6 month average heat input of fuel received based on weekly grab samples using ASTME711)

Fuel: Resinated wood, resinated wood pellets (Resinated)

Heat content in Btu/lb = (Supplier Certification for each shipment or using ASTME711)

Monthly % Heat Input Attributable to resinated wood and resinated wood pellets:

= [(Tons Resinated)*(Heat Content Resinated)] / [(Tons Resinated)*(Heat Content Resinated) + (Tons Woodwaste)*(Heat Content Woodwaste)]

Boiler Monthly Emissions Equations (tons/month)

$PM/PM_{10}/PM_{2.5}$ = ((PM EF lb/MMBtu X % ESP Operated Calendar Month) + (NO ESP EF lb/MMBtu X % ESP did not Operate for the Calendar Month) X Fuel fired during the calendar month (Tons) X 2000 lb/Ton X Heat Content) / 10^6)/2000 lb/Ton

SO_2 = SO_2 EF lb/MMBtu X Fuel fired during the calendar month (Tons) X 2000 lb/Ton X Heat Content) / 10^6)/2000 lb/Ton

NO_x = (Directly Measured (CERMs))

CO = (Directly Measured (CERMs))

VOC = (VOC EF lb/MMBTU X Fuel fired during the calendar month (Tons) X 2000 lb/Ton X Heat Content) / 10^6)/2000lb/Ton

Individual HAPs = (HAP EF lb/MMBTU X Fuel fired during the calendar month (Tons) X 2000 lb/Ton X Heat Content) / 10^6)/2000 lb/Ton

Combined HAPs = Total of Individual HAPs

Boiler Emission Factors

Pollutant	Emission Factor	Basis
PM Filterable	Highest of previous 3 source tests	Highest of previous 3 source tests
PM Filterable No ESP (including condensible PM)	0.367 lb/MMBtu	AP42 Table 1.6.1 Bark/Wet Wood with Mechanical Collector and Condensible PM
$PM_{10}/PM_{2.5}$	Highest of previous 3 source tests	Highest of previous 3 source tests
PM_{10} No ESP (including condensible PM)	0.337 lb/MMBtu	AP42 Table 1.6.1 Bark/Wet Wood with Mechanical Collector and Condensible PM

Pollutant	Emission Factor	Basis
$PM_{2.5}$ No ESP (including condensible PM)	0.207 lb/MMBtu	AP42 Table 1.6.1 Bark/Wet Wood with Mechanical Collector and Condensible PM
NOx	CERMs	Continuous Monitor
SO2	0.025 lb/MMBtu	AP 42 Table 1.6.2
CO	CERMs	Continuous Monitor
VOC	0.017 lb/MMBtu	AP 42 Table 1.6.3
HCl	Highest of previous 3 source tests	Highest of previous 3 source tests
Formaldehyde	1.3E-03 lb/MMBtu	NCASI Technical Bulletin 858 or highest of previous 3 source tests if facility begins use of resinated wood.
Benzene	3.30E-03 lb/MMBtu	NCASI Technical Bulletin 858
Styrene	1.90E-03 lb/MMBtu	NCASI Technical Bulletin 858
Acrolein	7.80E-05 lb/MMBtu	NCASI Technical Bulletin 858
Total Metals Combined Factor	3.91E-03 lb/MMBtu	The following combined: Antimony - Selenium
Antimony	4.20E-07 lb/MMBtu	NCASI Technical Bulletin 858
Arsenic	1.00E-06 lb/MMBtu	NCASI Technical Bulletin 858
Beryllium	1.90E-06 lb/MMBtu	NCASI Technical Bulletin 858
Cadmium	1.90E-06 lb/MMBtu	NCASI Technical Bulletin 858
Chromium	6.00E-07 lb/MMBtu	NCASI Technical Bulletin 858
Cobalt	1.90E-07 lb/MMBtu	NCASI Technical Bulletin 858
Lead	5.80E-06 lb/MMBtu	NCASI Technical Bulletin 858
Manganese	1.50E-04 lb/MMBtu	NCASI Technical Bulletin 858
Mercury	9.90E-07 lb/MMBtu	NCASI Technical Bulletin 858
Nickel	2.90E-06 lb/MMBtu	NCASI Technical Bulletin 858
Phosphorus	2.74E-05 lb/MMBtu	AP42 Table 1.6-3
Selenium	3.00E-06 lb/MMBtu	NCASI Technical Bulletin 858
Misc. Organics Combined Factor:	2.585E-03 lb/MMBtu	The following combined: Acetaldehyde - Xylenes
Acetaldehyde	1.90E-04 lb/MMBtu	NCASI Technical Bulletin 858
Acetophenone	3.70E-06 lb/MMBtu	NCASI Technical Bulletin 858
Carbon Tetrachloride	4.50E-05 lb/MMBtu	AP 42 Table 1.6-3
Chlorine	7.90E-04 lb/MMBtu	AP 42 Table 1.6-3
Chlorobenzene	1.70E-05 lb/MMBtu	NCASI Technical Bulletin 858
Chloroform	3.10E-05 lb/MMBtu	NCASI Technical Bulletin 858
Cumene	1.80E-05 lb/MMBtu	NCASI Technical Bulletin 858
Di-n-butylphthalate	3.30E-05 lb/MMBtu	NCASI Technical Bulletin 858

Pollutant	Emission Factor	Basis
2,4-Dinitrophenol	4.80E-07 lb/MMBtu	NCASI Technical Bulletin 858
2,4-Dinitrotoluene	9.40E-07 lb/MMBtu	NCASI Technical Bulletin 858
Bromomethane	1.50E-05 lb/MMBtu	AP 42 Table 1.6-3
Chloromethane	4.00E-05 lb/MMBtu	NCASI Technical Bulletin 858
1,2-Dichloroethane	2.90E-05 lb/MMBtu	AP 42 Table 1.6-3
1,2-Dichloropropane	3.30E-05 lb/MMBtu	AP 42 Table 1.6-3
Ethylbenzene	3.10E-05 lb/MMBtu	AP 42 Table 1.6-3
Hexane	2.90E-04 lb/MMBtu	NCASI Technical Bulletin 858
Methyl Isobutyl Ketone	2.30E-05 lb/MMBtu	NCASI Technical Bulletin 858
Methylene Chloride	5.40E-04 lb/MMBtu	NCASI Technical Bulletin 858
Napthalene	1.60E-04 lb/MMBtu	NCASI Technical Bulletin 858
4-Nitrophenol	3.30E-07 lb/MMBtu	NCASI Technical Bulletin 858
Pentachlorophenol	4.60E-08 lb/MMBtu	NCASI Technical Bulletin 858
Phenol	1.40E-05 lb/MMBtu	NCASI Technical Bulletin 858
Propionaldehyde	6.10E-05 lb/MMBtu	AP 42 Table 1.6-3
Toluene	2.90E-05 lb/MMBtu	NCASI Technical Bulletin 858
Tetrachloroethane	5.20E-05 lb/MMBtu	NCASI Technical Bulletin 858
2,3,7,8-Tetrachlorodibenzo-p-dioxin	8.60E-12 lb/MMBtu	AP 42 Table 1.6-3
1,1,1-Trichloroethane	6.40E-05 lb/MMBtu	NCASI Technical Bulletin 858
Trichloroethylene	2.80E-05 lb/MMBtu	NCASI Technical Bulletin 858
2,4,6-Trichlorophenol	2.20E-07 lb/MMBtu	NCASI Technical Bulletin 858
Vinyl Chloride	1.80E-05 lb/MMBtu	AP 42 Table 1.6-3
Xylenes	2.80E-05 lb/MMBtu	NCASI Technical Bulletin 858
POM Combined Factor	2.8E-05	The following combined: Acenapthene - perylene
Acenaphthene	9.10E-07 lb/MMBtu	AP 42 Table 1.6-3
Acenapthylene	5.00E-06 lb/MMBtu	AP 42 Table 1.6-3
Anthracene	3.00E-06 lb/MMBtu	AP 42 Table 1.6-3
Benzo(a)anthracene	6.50E-08 lb/MMBtu	AP 42 Table 1.6-3
Benzo(a)pyrene	2.60E-06 lb/MMBtu	AP 42 Table 1.6-3
Benzo(g,h,i)perylene	1.00E-07 lb/MMBtu	AP 42 Table 1.6-3
Benzo(l,k)fluoranthene	2.60E-09 lb/MMBtu	AP 42 Table 1.6-3
Benzo(k)fluoranthene	9.30E-08 lb/MMBtu	AP 42 Table 1.6-3
2-Chloronapthalene	1.60E-07 lb/MMBtu	AP 42 Table 1.6-3
Chrysene	3.60E-08 lb/MMBtu	AP 42 Table 1.6-3
Dibenzo(a,h)anthracene	2.40E-09 lb/MMBtu	AP 42 Table 1.6-3
Fluoranthene	1.60E-06 lb/MMBtu	AP 42 Table 1.6-3

Pollutant	Emission Factor	Basis
Fluorene	3.40E-06 lb/MMBtu	AP 42 Table 1.6-3
Indenol(1,2,3,c,d)pyrene	8.70E-08 lb/MMBtu	AP 42 Table 1.6-3
Monochlorobiphenyl	2.20E-10 lb/MMBtu	AP 42 Table 1.6-3
2-Methylnapthalene	1.60E-07 lb/MMBtu	AP 42 Table 1.6-3
Phenathrene	7.00E-06 lb/MMBtu	AP 42 Table 1.6-3
Pyrene	3.70E-06 lb/MMBtu	AP 42 Table 1.6-3
Perylene	5.20E-10 lb/MMBtu	AP 42 Table 1.6-3
Furans Combined Factor	1.90E-09 lb/MMBtu	The following combined: Hepotachlorodibenzo-p-furans - Tetrachlorodibenzo-p-furans
Hepotachlorodibenzo-p-furans	2.40E-10 lb/MMBtu	AP 42 Table 1.6-3
Hexachlorodibenzo-p-furans	2.80E-10 lb/MMBtu	AP 42 Table 1.6-3
Octachlorodibenzo-p-furans	8.80E-11 lb/MMBtu	AP 42 Table 1.6-3
Pentachlorodibenzo-p-furans	4.20E-10 lb/MMBtu	AP 42 Table 1.6-3
2,3,7,8-Tetrachlorodibenzo-p-furans	9.00E-11 lb/MMBtu	AP 42 Table 1.6-3
Tetrachlorodibenzo-p-furans	7.50E-10 lb/MMBtu	AP 42 Table 1.6-3
PCBs Combined Factor	1.27E-08 lb/MMBtu	The following combined: Decachlorobiphenyl - Tetrachlorobiphenyl
Decachlorobiphenyl	2.70E-10 lb/MMBtu	AP 42 Table 1.6-3
Dichlorobiphenyl	9.00E-10 lb/MMBtu	NCASI Technical Bulletin 858
Heptachlorobial	6.60E-11 lb/MMBtu	AP 42 Table 1.6-3
Hexachlorobiphenyl	8.00E-10 lb/MMBtu	NCASI Technical Bulletin 858
Pentachlorobiphenyl	1.80E-09 lb/MMBtu	NCASI Technical Bulletin 858
Trichlorobiphenyl	5.50E-09 lb/MMBtu	NCASI Technical Bulletin 858
Tetrachlorobiphenyl	3.40E-09 lb/MMBtu	NCASI Technical Bulletin 858

Emergency Generator and Diesel Fire Pump Operating Parameters
Fuel Type: Diesel, 0.0015% sulfur, 128,748 Btu/gallon
Max Hours: 200
Emergency Generator Rating: 909 HP, 600 KW, 5.63 MMBtu/hr
Fire Pump Rating: 250 HP, 1.75 MMBtu/hr

Emergency Generator (Gen) and Diesel Fire Pump (FP) Emissions Equations (tons/month)

$PM/PM_{10}/PM_{2.5}$ (Gen)	=	PM EF lb/hr X Operating Hours /2000 lb/Ton		
$PM/PM_{10}/PM_{2.5}$ (FP)	=	PM EF lb/hr X Operating Hours /2000 lb/Ton		
SO_2	=	(SO_2 EF lb/hr) X	(Operating Hours) X	(1/2000 ton/lb)
NO_x	=	(NO_x EF lb/hr) X	(Operating Hours) X	(1/2000 ton/lb)
CO	=	(CO EF lb/hr) X	(Operating Hours) X	(1/2000 ton/lb)
VOC	=	(VOC EF lb/hr) X	(Operating Hours) X	(1/2000 ton/lb)

Emergency Generator and Fire Pump Emission Factors

Pollutant	Emission Factor	Basis
(GEN) $PM/PM_{10}/PM_{2.5}$	3.2 lb/hr	NSPS Subpart IIII limit
(FP) $PM/PM_{10}/PM_{2.5}$	0.3 lb/hr	NSPS Subpart IIII limit
(GEN) NO_x	6.6 lb/hr	NSPS Subpart IIII limit
(FP) NO_x	2.0 lb/hr	NSPS Subpart IIII limit
(GEN) SO_2	6.9 lb/hr	AP42 Sec. 3.3
(FP) SO_2	4.9 lb/hr	AP42 Sec. 3.3
(GEN) CO	0.0433 lb/hr	AP42 Sec. 3.3
(FP) CO	0.0129 lb/hr	AP42 Sec. 3.3
(GEN) VOC	0.5 lb/hr	AP42 Sec. 3.3
(FP) VOC	0.2 lb/hr	AP42 Sec. 3.3

Cooling Tower Operating Parameters

Tower Capacity	1,062,900 gph
Tower Capacity	8,864,586 lb/hr
Drift Loss	0.0017%
Drift Per Hour	150.07 lbs
TDS Content	2,000 ppm

Cooling Tower Emissions (tons/month)

$PM/PM_{10}/PM_{2.5}$ = (EF lb/hr X Operating Hrs)/ 2000 lb/ton

Cooling Tower Emission Factors

Pollutant	Emission Factor	Basis
$PM/PM_{10}/PM_{2.5}$	0.821 lb/hr	Based on AP42 13.4

Ash Silo Operating Parameters

Max Input Rate: 0.25 ton/hr

Control Efficiency: 99.00%

Ash Silo Emissions (tons/month)

$PM/PM_{10}/PM_{2.5}$ = (EF lb/hr X Operating Hours)/ 2000 lb/ton

Ash Silo Emission Factors

Pollutant	Emission Factor	Basis
$PM/PM_{10}/PM_{2.5}$	0.275 lb/hr	AP42 Section 11.8

Dry Sorbent Operating Parameters
Max Input Rate: 7 tons/hr
Control Efficiency: 99.00%
Dry Sorbent Silo Emissions Equations (tons/month)
$PM/PM_{10}/PM_{2.5}$ = (EF lb/hr X Hrs Filling Silo)/ 2000 lb/ton
Dry Sorbent Silo Emission Factors

Pollutant	Emission Factor	Basis
$PM/PM_{10}/PM_{2.5}$	0.154 lb/hr	AP42 Section 11.17

Grinder Operating Parameters
Max Capacity: 60 ton/hr
Average Capacity: 6 ton/hr
Moisture Content: 48.5%
Grinder Emissions Equations (tons/month)
$PM/PM_{10}/PM_{2.5}$ = (EF lb/hr X Hrs Grinding)/ 2000 lb/ton
VOC = (EF lb/hr X Hrs Grinding)/ 2000 lb/ton
Grinder Emission Factors

Pollutant	Emission Factor	Basis
$PM/PM_{10}/PM_{2.5}$	0.0108 lb/hr	Based on NCASI Bulletin 884
VOC	1.08 lb/hr	Based on NCASI Bulletin 884

Attachment B

Statement of Basis
Permit No. TV-0160-0022

Company Name:	Allendale Biomass, LLC	**Permit Writer:**	James Myers
Permit Number:	TV-0160-0022	**Date:**	December 11, 2019

DATE APPLICATION RECEIVED: August 27, 2014

FACILITY DESCRIPTION
This facility produces electricity using a biomass boiler. The facility consists of a 314 million Btu/hr stoker boiler and support equipment such as cooling towers and an ash silo. The boiler is equipped with sorbent injection (voluntary), an electrostatic precipitator (ESP), and selective non-catalytic reduction (SNCR). A dry sorbent silo and an aqueous ammonia tank (insignificant activity) are maintained on site to support the control equipment.

PROJECT DESCRIPTION
The facility is requesting an initial Title V operating permit.

CHANGES FROM ORIGINAL CONSTRUCTION PERMIT
Equipment:

Unit ID 01, Equipment ID B001 – The capacity of the boiler was listed as 275 million Btu/hr in the construction permit. Subsequent testing indicates that the maximum capacity is 314 million Btu/hr. This change did not result in any significant emission changes or change any regulatory applicability.

Unit ID 01, Control Equipment CD-ESP1, CD-SNCR1, CD-DS1 – The prefix "CD" will be removed. DS1 will be labeled as voluntary since source tests have shown HCl emissions are minimal and the sorbent is not needed to meet any regulatory limit. Initial source testing in 2014 indicated the HCl emissions were 3.58E-02 lb/hr (0.157 tpy) with no trona injection and 2.99E-02 lb/hr (0.131 tpy) with trona injection. Source testing was also performed for the following HAPs: Formaldehyde (2.22E-02 lb/hr), Acetaldehyde (<0.264 lb/hr), Acrolein (<0.204 lb/hr), and Benzene (<0.116 lb/hr). The HCl was retested in 2015 with the boiler running at 109.6% of the process design rate. The HCl emissions were <2.17E-02 lb/hr (9.5E-02 tpy). No trona was used during this testing.

Unit ID 03, Equipment BFC – This process was never installed. The facility does bring a portable chipper on-site as needed.

Unit ID 04, Equipment DSS – In the construction permit CA statement of basis and application, the emissions are based on the bin vent filters being considered inherent equipment. Since the bin vents are required to maintain product rather than for air quality, they will be considered inherent for the Title V permit.

Unit ID 05, Equipment AS - In the construction permit 0160-0022-CA's (CA) statement of basis and application, the emissions are based on the bin vent filters being considered inherent equipment. Since the bin vents are required to maintain product rather than for air quality, they will be considered inherent for the Title V permit.

Other Changes:

Unit ID 01, Equipment ID B001 – The facility was issued construction permit 0160-0022-CB (CB) for approval to use the following fuels: Downed trees not meeting the definition of yard waste, pallets, and wood pellets containing resin.

Comparison of Construction Permits and Title V Conditions

Construction Condition No.	Title V Condition No.	Type of Condition	Comments
CA.R1 - 01.1	C.8	Std. 1 PM limit, source testing	No changes except the source testing is subsumed by 40 CFR 63 Subpart JJJJJJ.
CA.R1 - 01.2	C.9	Std. 1 SO_2 limit, testing and monitoring	Limit changed from 3.5 lb/Million Btu to 2.3 lb/Million Btu. Testing requirement removed since fuel analysis was performed. Monitoring added requiring a new analysis if the fuel stream changes.
CA.R1 - 01.3	C.7, C.13	Std. 1 and NSPS Subpart Db opacity limit, testing, and monitoring	This condition was split apart since Std. 1 allows for a higher opacity for soot blowing and Db does not.
CA.R1 - 01.4	C.12	Std. 5.2 NOx limit and monitoring	The CEMs required by the revised Standard was added to the monitoring.
CA.R1 - 01.5	C.13	NSPS Subpart Db opacity and particulate limits and monitoring	The opacity and particulate limits were combined into a single condition since they share the same monitoring, recordkeeping, and reporting under the Subpart.
CA.R1 - 01.6	NA	Validation of specific pollutants	This condition was a one-time source test for several HAPs to verify emission estimates. Periodic testing will not be required.
CA.R1 - 02.1	C.10	Std. 4 opacity limit for the cooling tower	No change.
CA.R1 - 03.1	NA	Std. 4 opacity limit for the fuel chipper	This process was never installed
CA.R1 - 03.2	NA	Std. 4 PM limit for fuel chipper	This process was never installed
CA.R1 - 04.1	C.10	Std. 4 opacity limit for the dry sorbent silo	No change
CA.R1 - 05.1	C.10	Std. 4 opacity limit for the ash silo	No change
CA.R1 - 5.D.1	C.6, C.21	MACT avoidance limit for HCl	The major source MACT avoidance limit is now combined with the other facility wide synthetic minor limits. The biennial source testing for HCl emissions is now a separate condition C.21.
CA.R1 - 5.D.2	C.6, C.12, C.14	Facility Wide PSD avoidance limit and monitoring	The CEMs requirement for NOx CEMs was removed and added to the Std. 5.2 condition C.12 and the CO CEMs was removed and is now condition C.14. The condition, C.6, still specifies that CEMs data will be used to show compliance with the PSD avoidance limits. The regulation referenced to monitor the CO CEMs was changed from SC 61-62.60, Subpart

Company Name:	Allendale Biomass, LLC	**Permit Writer:**	James Myers
Permit Number:	TV-0160-0022	**Date:**	December 11, 2019

Construction Condition No.	Title V Condition No.	Type of Condition	Comments
			A to requiring the CO CEMs to be operated and monitored in accordance with the provisions of the facility's Department approved site specific CEMs monitoring plan dated October 4, 2013.
CA.R1 - 5.D.3	NA	CAM condition for NOx	The Title V application requested the NOx CEMs be considered a continuous compliance determination method (CCDM) and Standard 5.2 now requires NOx CEMS for this type of boiler. CCDMs specified by a Title V permit are exempt from CAM.
CA.R1 - 6.B.1	C.15	Requirement to submit fugitive dust plan	The facility has submitted a fugitive dust plan in the TV application and it will be incorporated into the permit. The dust plan was revised to require the updating of the plan if the Department or facility determines it is necessary.
CA.R1 - 6.B.2	E.3	NSPS IIII applicability condition for the generator and fire pump.	This is now a Standard condition in the MACT Section.
CA.R1 - 6.B.3	NA	NSPS IIII operating hour requirements for the generator and fire pump	This is covered by the general applicability condition in the Title V permit.
CA.R1 - 6.B.4	NA	Hours limitation for chipper	This process was never installed.
CA.R1 - 6.B.5	NA	Defines what can be stored in the SNCR Reducing Agent Storage Tank	This tank was exempt from construction permitting and will be an insignificant activity based on emissions. The Title V permit does not include conditions for insignificant activities.
CA.R1 - 6.B.6	NA	Bin Vent efficiency documentation	The facility was required to submit documentation that the bin vents met a 99.99% efficiency. An email was received from the facility on September 21, 2015 with an emission guarantee from Staclean.
CB – C.4	C.16	Std. 3 Exemption	This was added to include the Standard 3 exemption issued through construction permit CB.
CB – C.3	C.17	Defines the allowable fuels	This was added to allow for additional fuels in construction permit CB.
NA	C.18	CAM CCDM Exemption	This condition documents the exemption from CAM for the SNCR which uses a CEMs to comply with Standard 5.2.
CA.R1 - 5.B.9	C.19	ESP Monitoring	Changed from primary and secondary power to only secondary power.
NA	C.20	Source Testing for Resinated Wood	This was added to require testing when the facility uses resinated wood allowed in construction permit CB.

SOURCE TEST REQUIREMENTS

Standard 1, Section VI, requires woodwaste boilers to perform source tests for PM on a biennial basis or as required by permit conditions. The source tests requirements have been subsumed by the requirements of 40 CFR 63 Subpart JJJJJJ.

Standard 3, Section VIII, requires semiannual source tests for certain metal HAPs and HCl. The facility has been granted an exemption from Standard 3 since it complies with 40 CFR 63 Subpart JJJJJJ.

40 CFR 63, Subpart JJJJJJ, requires triennial source tests for filterable PM except as specified in paragraphs (b) through (e) of 40 CFR 63.11220.

An initial test for HCl and formaldehyde will be required if the facility used resinated wood or wood pellets and the test will be repeated for each increase in the percentage heat input from resinated wood use beyond the maximum allowable level established from the previous source test.

The biennial source testing required by Construction CA-R1 for HCl will be required since the facility bases the emission factors on these.

SPECIAL CONDITIONS, MONITORING, LIMITS

Although the cooling towers, dry sorbent silo, and ash silo would each be considered an insignificant activity based on emissions, they will be permitted equipment in accordance with the "Response to Comments" for construction permit CA.

EMISSIONS

FACILITY WIDE EMISSIONS*		
Pollutant	**Uncontrolled Emissions**	**Controlled/Limited Emissions**
	TPY	**TPY**
Particular Matter (PM)	810.60	57.9 / <250.0
Particulate Matter <10 Microns (PM10)	810.60	57.9 / <250.0
Particulate Matter <2.5 Microns (PM2.5)	810.60	57.9 / <250.0
Sulfur Dioxide (SO2)	38.8	No Control
Nitrogen Oxides (NOx)	333.0	275.6** / <250.0
Carbon Monoxide (CO)	282.2	No Control / <250.0
Total Volatile Organic Compounds (VOC)	30.7	No Control
Lead (Pb)	0.00798	No Control
HCl	0.9	No Control
Highest HAP: Benzene	4.5	No Control
Total HAP	13.8	No Control
Greenhouse Gases (Mass Basis)	260507 (metric)	No Control
Greenhouse Gases (CO2e Basis)	263956 (metric)	No Control

* There were no changes to emissions between construction permit CB and the Title V application. The addition of new fuels under permit CB was not expected to increase any emissions. A requirement for the facility to record the

times and amounts of resinated wood combusted is required in the Operating permit. The difference between permit CA and Title V emissions is based on the change in boiler rating with a couple of exceptions. For permit CA, a boiler rating of 275 Million Btu/hr was used for the calculations. After post construction source testing was performed, it was determined that the boiler should be rated at 314 Million Btu/hr. For NOx emissions, both permit CA and Title V controlled emissions were based on an emission factor of 0.2 lb/Million Btu. For permit CA the uncontrolled NOx emissions were back calculated assuming a control efficiency of 40% while the Title V uncontrolled NOx emissions assumed a control of 10%. For HCl emissions, permit CA used a vendor guarantee for the controlled emissions (Sorbent) of 0.0082 lb/Million Btu and back calculated the uncontrolled HCl emissions assuming a control efficiency of 60%. For the Title V HCl emissions a NCASI factor of 0.00067 lb/Million Btu was used for both the controlled and uncontrolled (no Sorbent used). Source testing has confirmed that this emission factor is appropriate.

** The controlled NOx emissions include a 10% control efficiency from the SNCR for the boiler (assumed to operate at maximum capacity 8760 hours annually), and the emergency fire pump and generator operating at 200 hours each. The facility will comply with the <250.0 ton per year limit by using CEMs. Although the 0.20 lb/Million Btu emission factor indicates the facility would exceed the 250.0 limit, the use of the CEMs demonstrates the facility operates under this limit. A review of 2 years' worth of reporting data shows an average emission factor of 0.169 lb/Million Btu and an average annual NO_x emission rate of 235.3 tons per year.

OPERATING PERMIT STATUS

This is the facility's initial Title V permit.

REGULATORY APPLICABILITY REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Section II.E - Synthetic Minor	The facility is a potential major source for PM, PM_{10}, $PM_{2.5}$, NO_x, CO, and single and total HAPs. The facility has <250.0 tpy limits for each PM, PM_{10}, $PM_{2.5}$, NO_x, and CO to avoid PSD, and less than 10.0 tons per year for any single HAP emission and less than 25.0 tons per year for any combination of HAP emissions to avoid MACT requirements. Monitoring: PM, PM_{10}, $PM_{2.5}$: The boiler is equipped with an ESP and will monitor the power to ensure proper operation. The facility will use emission factors from the highest of the previous three source tests and operation records to calculate 12 month rolling sums to make sure they do not exceed the limit for each pollutant. The current emission factors based on the December 2017 source test are: PM: 0.00582 lb/ Million Btu, PM_{10}: 0.01096 lb/ Million Btu, $PM_{2.5}$: 0.01096 lb/Million Btu These factors are based on department approved source test and should represent the emissions from the boiler.

Regulation	Comments/Periodic Monitoring Requirements
	NO_x and CO: The boiler is equipped with continuous emission monitors (CEMS) for these pollutants. The facility will use the SNCR for NOx and operational control of the boiler for CO to make sure the 12 month rolling sums do not exceed the limit for each pollutant. HAPs: The facility will use boiler operation and emission factors to calculate rolling monthly emissions. Source testing will also be required for the new allowable fuels. The HCl emission factor is based on the highest of the previous three source tests. This factor from the Department approved source test should represent the HCl emissions from this boiler. Reporting: The facility will use NOx and CO CEMs for the determination of their emissions. The facility will be required to calculate 12 month rolling sums for each pollutant for all equipment and submit semiannual reports. 12 month rolling sums will also be required for PM, PM_{10}, $PM_{2.5}$, single and Total HAPs.
Standard No. 1	The boiler is subject to the 20% opacity limit, the 0.6 lb/Million Btu PM limit, and the 2.3 lb/Million Btu SO_2 limit. Monitoring: PM: Source tests are required for this boiler on a biennial basis or as required by permit conditions. The boiler's uncontrolled emission rate is 0.577 lb/Million Btu (filterable and condensable). The boiler is equipped with an ESP but specific monitoring of the ESP is not required for this limit since the uncontrolled emissions are less than the limit. The PM source testing for this Standard will be subsumed by the testing requirements for 40 CFR 63 Subpart JJJJJJ. The Subpart JJJJJJ requires triennial source testing except as specified in paragraphs (b) through (e) of 40 CFR 63.11220 for the more stringent limit of 3.0E-02 lb per Million Btu. Source testing at the facility has demonstrated the boiler can meet this emission rate. Standard 1 allows flexibility for the source testing frequency in Section VI. Opacity: The boiler is required by Section IV to operate a COM since the boiler is not equipped with a scrubber. The COM will be used to show compliance with the 20% opacity limit. During periods of startup and shutdown, the facility will monitor minimum exhaust temperature and oxygen percentage to allow the ESP to operate as long as practical to minimize emissions.

Company Name:	Allendale Biomass, LLC	**Permit Writer:**	James Myers
Permit Number:	TV-0160-0022	**Date:**	December 11, 2019

<table>
<tr><th>Regulation</th><th>Comments/Periodic Monitoring Requirements</th></tr>
<tr><td></td><td>SO_2: The boiler burns clean wood waste and resinated wood pellets. A new analysis will be required if the waste stream changes. The wood waste was tested as-fired in 2014 which resulted in an emission rate of 0.04 lb/Million Btu.
<table>
<tr><th>Max PM Limit @ 0.6 lb/MMBtu</th><th>Max SO_2 Limit @ 2.3 lb/MMBtu</th><th>Uncontrolled PM lb/hr</th><th>Controlled PM lb/hr</th><th>Uncontrolled SO_2 lb/hr</th></tr>
<tr><td>188.4 lb/hr</td><td>722.2 lb/hr</td><td>181.18</td><td>9.42</td><td>7.85</td></tr>
</table></td></tr>
<tr><td>Standard No. 3 (state only)</td><td>The boiler uses wood pellets which may contain resinated wood and ground resinated wood. The boiler would be subject to the limits of Table III in Section III.J; however, as provided in Section I(J)(3), the facility has requested an exemption from the requirements of this Standard by complying with the Area Source Boiler MACT (Subpart JJJJJJ). The facility was granted the exemption in construction permit CB.</td></tr>
<tr><td>Standard No. 4</td><td>The Cooling Towers (CT), Dry Sorbent Silo (DSS), and Ash Silo are subject to the opacity and PM limits of this Standard.
<table>
<tr><th>Process</th><th>Opacity %</th><th>Process Weight Rate (ton/hr)</th><th>PM Limit (lb/hr)</th><th>Uncontrolled PM (lb/hr)</th><th>Monitoring</th></tr>
<tr><td>CT</td><td>20</td><td>4411</td><td>98.4</td><td>0.30</td><td>Weekly Visual Inspection*</td></tr>
<tr><td>DSS</td><td>20</td><td>7.0</td><td>15.1</td><td>0.20</td><td>Weekly Visual Inspection*</td></tr>
<tr><td>AS</td><td>20</td><td>0.25</td><td>1.62</td><td>0.20</td><td>Weekly Visual Inspection*</td></tr>
</table>
*Monitoring for PM is not required since the uncontrolled emissions are less than the limit.</td></tr>
<tr><td>Standard No. 5</td><td>This standard does not apply.</td></tr>
<tr><td>Standard No. 5.2</td><td>The boiler burns biomass and is required to meet the 0.20 lb/Million Btu NO_x limit in Section III of the Standard for wood fired boilers.

Monitoring: The facility is operating a NOx CEMS on the boiler to show continuous compliance with the NO_x limit required by Section IV.A.1. Boilers >200 Million Btu/hr burning a solid fuel are required to operate a CEMS. The facility submitted a CEMs monitoring plan dated October 4, 2013 which was approved by the Source Evaluation Section. The boiler is also equipped with SNCR used to comply with the limit. The use of the SNCR system is not always necessary depending on what load the boiler is operating at. The facility will continue to maintain this system and use it as needed to comply with the limit. The facility will use the CEMS to determine the appropriate amount of ammonia to inject if any.</td></tr>
</table>

Regulation	Comments/Periodic Monitoring Requirements
	The boiler is subject to the federal tune-up requirements in 40 CFR 63 which will meet the tune-up requirements in Section IV(A)(4). The emergency generator and fire pump are exempt in accordance with Section I(B)(2).
Standard No. 7	The facility is not one of the 28 source categories listed in Section (b)(32)(i)(a). The major source threshold for each pollutant is <250.0 TPY. The facility has taken synthetic minor limits for particulates, NO_x and CO to remain a minor source for this Standard.
61-62.6	The facility was required to submit a fugitive dust control plan. This plan has been incorporated into this operating permit.
40 CFR 60 and 61-62.60	**<u>Applicable Subparts:</u>** **Subpart Db:** (Boilers >100 Million Btu) The 314 Million Btu/hr biomass boiler is subject to the following parts of this subpart: <u>60.43b:</u> Standard for PM – (f) limits the opacity to 20% (g) states the opacity and PM limit apply at all times except for SSM. (h)(1) limits the particulates to 0.030 lb/Million Btu <u>60.48b:</u> PM Monitoring: (a) specifies the option for a COMS which the facility has chosen to install. (e) specifies the procedures in 60.13 shall be used for the COMS. (f) requires the facility to maintain records of the opacity. <u>60.49b:</u> Recordkeeping and Reporting: (d)(2) requires the facility to keep fuel usage records. (h) Requires the submission of excess emission reports and (w) requires semiannual reporting **Subpart IIII:** The 250 HP emergency fire pump and the 600 kW emergency generator are subject to this Standard as emergency stationary internal combustion engines. **<u>Non-Applicable Subparts:</u>** **Subpart D and Da:** (Fossil Fuel Fired Boilers) This boiler only burns biomass. **Subpart Kb (VOL Tanks):** The ammonia tank does not store volatile organic liquids. The diesel fuel tank is not subject to the standard because it is less than 75 cubic meters in capacity. **Subpart CCCC:** The boiler is not subject to this Standard since none of the allowable materials that can be combusted in the boiler meets the definition of a solid waste. The facility is required to keep records required by 40 CFR 60.2175(v) to document how each secondary material meets the legitimacy criteria. The facility was issued construction permit CB on March 10, 2017 for the addition of chipped wood pallet and crate material, wood pellets made from resinated wood, chipped or ground resinated wood, and wood from natural disasters such as ice storms, tornado/wind

Regulation	Comments/Periodic Monitoring Requirements
	storms, or floods. These materials were determined not to meet the definition of a solid waste.
40 CFR 61 and 61-62.61	The boiler is not subject to any of these Standards.
40 CFR 63 and 61-62.63	**Applicable Subparts:** **Subpart JJJJJJ:** (Area Source Boiler MACT) This facility is an area source for HAPs and the boiler is subject to this Standard. The Standard requires daily block averages of 10% or less opacity from the COMs to comply with the MACT limit of 0.03 lb/Million Btu. The facility will check the ESP's primary and secondary voltage each shift and use the 10% opacity. **Subpart ZZZZ:** (Reciprocating Internal Combustion Engines) The 250 HP emergency fire pump and the 600 kW emergency generator are subject to this Standard. Compliance with the Standard is demonstrated by complying with 40 CFR 60 Subpart IIII. **Non-Applicable Subparts:** **Subpart Q:** (Cooling Towers) This subpart does not apply to area sources. **Subpart DDDDD:** (Boilers) This subpart does not apply to area sources **Subpart UUUUU:** (Coal or Oil Fired EGUs) This boiler does not meet the definition of an EGU since it does not produce more than 25 megawatts electric and it does not use fossil fuels.
61-62.68	The facility does not store any regulated chemicals above threshold quantities.
40 CFR 64	**CAM Applicability**

Equipment ID	Control ID	Limit	Uncontrolled Emission	Control Emission (TPY)	Subject (yes/no)
B001	ESP	NSPS - 0.03 lb/MMBtu	PM_{10} = 794 TPY, 0.57 lb/MMBtu	41	No – See Note 1
B001	SNCR	Std. 5.2 – 0.20 lb/MMBtu	NO_x = 307.5 TPY, 0.22 lb/MMBtu	275	No – See Note 2

1. The boiler is subject to the NSPS Db PM limit (proposed before 1990, monitoring requirements amended after 1990) and uses a control device to comply with it. The uncontrolled PM_{10} emissions are greater than 100 TPY. The controlled emissions are <100 TPY so it is considered an "other pollutant-specific emission unit." Since NSPS Subpart Db has been amended after 1990, the limit would not be subject to CAM monitoring.

Regulation	Comments/Periodic Monitoring Requirements
	2. The boiler is subject to the Standard 5.2 NOx limit and uses SNCR to comply with it. The uncontrolled and controlled NOx emissions are each ≥100 TPY so it is considered a "large pollutant-specific emission unit." CAM would be required with the initial Title V application; however, Standard 5.2 requires the use of a continuous compliance determination method (CCDM) for boilers of this size. 40 CFR 64.2(b)(1)(vi) exempts the requirements of CAM when the Title V permit specifies a CCDM. The facility has requested this exemption which has been granted by the Department.

AMBIENT AIR STANDARDS REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Standard No. 2	See Modeling Summary Dated 8-31-16.
Standard No. 7.c	See Modeling Summary Dated 8-31-16.
Standard No. 8 (state only)	See Modeling Summary Dated 8-31-16.

PUBLIC NOTICE

A previous draft Title V Permit underwent a 30-day public notice period in accordance with SC Regulation 61-62.1, Section II.N. The comment period was open from November 1, 2017 to November 30, 2017 and was placed on the BAQ website during that time period. Comment were received and the draft permit was revised.

This Title V permit underwent a 30-day public notice. The comment period was open from October 29, 2018 to December 27, 2018 and was placed on the BAQ website during that time period. The comment period was originally from October 29, 2018 to November 27, 2018. The period was extended based on a public request. Comments were received during the extended comment period. The comments and Department responses can be viewed in a separate "Department's Response to Comments" document dated December 11, 2019.

CHANGES TO DRAFT TITLE V PERMIT BASED ON COMMENTS RECEIVED DURING THE SECOND COMMENT PERIOD

- Added "using the calculations and emission factors in Attachment – Algorithms" to the Monitoring/Record Keeping/Reporting/Other section of Condition C.6.
- Added to Condition C.17 the requirement to sample fuel for chlorine content during the required biennial source test and to record the chlorine concentration in the source test summary report.
- Added the requirement to repeat the source test for HCl and formaldehyde each time the facility wants to increase the allowable percentage heat input from resinated wood or resinated wood pellets to Condition C.20; also clarified requirements for establishing and verifying compliance with the maximum allowable percentage of heat input from resinated wood or resinated wood pellets.
- (Condition C.21) Added: requires biennial source testing for HCl to reestablish or verify the emission factor.
- Added requirement to use the highest of the previous 3 source tests for emission factors based on source testing to Attachment – Algorithms.
- Added clarifications to the Attachment-Algorithms, including that the condensibles are included for PM_{10} and $PM_{2.5}$ when the AP42 factors are used for emission factors.

CHANGES TO TITLE V PERMIT BASED ON OBERSERVATIONS PROVIDED BY EPA DURING 45 DAY REVIEW

- In Condition 6, references to Conditions C.20 and C.21 were added to clarify the requirements for demonstrating compliance with the synthetic minor limits.
- In Condition C.10, added "presence of any visible emissions" to define what is meant by abnormal emissions.

SUMMARY AND CONCLUSIONS

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.

Attachment C

Response to Comments
Permit No. TV-0160-0022

South Carolina Department of Health and Environmental Control
Bureau of Air Quality

Response to Comments
Public Notice #18-051-TV
Allendale Biomass, LLC
Title V Permit
Fairfax, Allendale County, South Carolina
Permit No. TV-0160-0022

The following document is the SC Department of Health and Environmental Control's (DHEC) Bureau of Air Quality (Department) response to the comments made during the formal comment periods held October 29, 2018 – December 27, 2018, regarding the draft Title V operating permit for Allendale Biomass, LLC at 307 Airport Loop Road, Goose Creek, Fairfax, Allendale County, South Carolina. The written comments received regarding the draft permit are available for viewing at the SC DHEC Columbia office located at 2600 Bull Street, Columbia, SC 29201, or hardcopies can be requested by contacting our Freedom of Information Office at (803) 898-3817.

During the comment period, comments were received from the Environmental Integrity Project on behalf of: South Carolina Coastal Conservation League, South Carolina Chapter of the Sierra Club, Partnership for Policy Integrity, Natural Resources Defense Council, Our Children's Earth, and itself.

The Department has reviewed each comment and revised the draft permit where appropriate based on some of the comments received. The following is a summary of the changes to the draft permit since it went on public notice in 2018:

- Added "using the calculations and emission factors in Attachment – Algorithms" to the Monitoring/Record Keeping/Reporting/Other section of Condition C.6.
- Added to Condition C.17 the requirement to sample fuel for chlorine content during the required biennial source test and to record the chlorine concentration in the source test summary report.
- Added the requirement to repeat the source test for HCl and formaldehyde each time the facility wants to increase the allowable heat input from resinated wood or resinated wood pellets to Condition C.20; clarified requirements for establishing and verifying compliance with the maximum allowable percentage of heat input from resinated wood and resinated wood pellets.
- (Condition C.21) Added: requires biennial source testing for HCl to reestablish or verify the emission factor.
- Added requirement to use the highest of the previous 3 source tests for emission factors based on source testing to Attachment – Algorithms.
- Added clarifications to the Attachment-Algorithms, including that the condensibles are included for PM10 and PM2.5 when the AP42 factors are used for emission factors.

The draft permit was originally placed on public notice (Public Notice #17-060-TV) in 2017 and comments were received. The 2017 Draft permit was revised to reflect those comments and renoticed (Public Notice #18-051-TV). The comments received on the 2017 Draft permit and Department's response to those comments are located in the attachment at the end of this document.

The following are the comments received on the 2018 Draft permit with the Department's response to each comment immediately following the comment:

Environmental Integrity Project Comments Received on December 20, 2018

I. Comment: The Draft Permit's Limits on the Facility's Potential to Emit Hazardous Air Pollutants (HAPs) are Not Enforceable as a Practical Matter, and the Draft Permit Lacks Sufficient Monitoring Requirements to Assure the Facility's Compliance with the Limits.

Department's Response

In response to the commenter, Condition C.20 of the permit requires initial source testing for HCl and formaldehyde when the facility uses resinated wood and additional source testing any time the facility seeks to increase the percentage of heat input from resinated wood beyond what was used in the initial source test. The commenter noted that a referenced Condition C.21 was missing from the noticed draft permit. Condition C.21 of the final permit requires source testing to verify the emission factor for HCl emissions every two years. The statement of basis is updated to explain this change and reported this condition as Condition C.21. See Section I.A below for discussion of the adequacy and enforceability of the draft Title V permit's synthetic minor limits on HAPs.

A. The commenter states: "Though Fuel Restrictions are Needed to Limit the Facility's Potential to Emit HAPs to Below the Major Source Thresholds, the Draft Permit Fails to Identify the Fuel Restrictions as PTE Limits, and Unlawfully Allows DHEC to Change the Fuel Restrictions Without Modifying the Permit." More specifically, the commenter asserts that the HAP PTE limits are "blanket" limits and that the permit's fuel restrictions should be identified as PTE limits, any change to which would require a significant permit modification.

Department's Response

The adequacy and enforceability of the draft Title V permit's synthetic minor limits for HAPs were established in Construction Permit 0160-0022-CA issued to the facility. These limits are not "blanket" limits; they are enforceable limits supported by testing, monitoring, recordkeeping, and reporting conditions (including algorithms for calculating and verifying emissions). But for the change to include the compliance algorithm as a part of the permit (upon the commenter's request), the applicable PTE limits and supporting conditions were not changed by, and remain in force under, Construction Permit 0160-0122-CA. Construction Permit 0160-0022-CA was subject to public notice and comment, and further administrative and judicial review of the Department's final decision were available. As such, the retained procedures and

requirements for ensuring compliance with the facility's synthetic minor limits may be incorporated into the Title V permit, and their legal and practical enforceability is not an issue subject to further Department or judicial review.

Additionally, the source testing, emission calculations in the application, and permit algorithm attachment demonstrate the potential HAP emissions are 13.8 tons per year for total HAPs and 4.5 tons per year for benzene which is the highest single HAP. These are based on the permitted types of fuel the facility may use. These emissions are less than the major source thresholds of 25 tons per year for total HAPs and 10 tons per year for single HAPs. The current fuel restrictions are not needed to limit the facility's potential to emit below the HAPs major source thresholds, as other permit conditions already restrict PTE below major source levels. If any new fuels not listed in the permit are proposed by the facility, the Department will conduct an evaluation to determine whether any additional restrictions to avoid the Major Source MACT thresholds are needed.

If the facility wishes to use a fuel not listed in the permit, Condition C.17 requires the facility to receive approval by the Department before using any other fuels. A construction permit would be required unless the new fuel qualified for an exemption from construction permitting. Following a construction permit or an exemption from construction permitting, the facility would need to make the appropriate Title V modification request to list the new fuel in the operating permit.

B. Comment: The Fuel Restrictions are Inadequate to Ensure that the Facility's HAP Emissions Remain Below the 25.0tpy/10.0tpy HAP Major Source Threshold.

1. The commenter states: "The Draft Permit Authorizes the Facility to Fire Resinated Wood Even Though it Appears that Testing Has Not Been Performed to Determine HAP Emissions Resulting From Use of this Fuel Type." Specifically, the commenter asserts that testing is needed to demonstrate the facility's maximum HAP emissions capacity when firing resinated wood does not exceed the major source threshold. The commenter also asserts that the establishment of an enforceable limit on heat input attributable to resinated wood combustion requires a significant permit revision. The commenter argues that until emission testing of resinated wood combustion is performed, the facility must be regulated as a major source of HAP.

Department's Response

The commenter expresses concern over the facility's ability to burn resinated wood despite not having performed source testing on the wood. The facility provided fuel analysis for the additional fuels allowed by construction permit 0160-0022-CB. The facility's analysis indicated there should be no measurable

increase in any of the hazardous air pollutant emissions[1]. The facility will be required to source test the wood the first time it utilizes resinated wood and the test must be repeated any time the facility wishes to increase the percentage of heat input from resinated woods beyond the maximum allowed as required by Condition C.5 and C.20. The 180 days to perform the test allows the time for the facility to submit a source testing plan to the Department and for the Department to approve the plan and make arrangements to observe the test if necessary. The 180 days is also consistent with regulations such as 40 CFR 60 (NSPS) and 40 CFR 63 (MACT) when source tests are required.

The emissions from the resinated wood are expected to be similar to those from the fuels the facility is currently using. The biomass boiler at the Allendale facility is designed to operate on woody biomass within a certain fuel moisture range. Although only clean wood waste was burned during the source testing, the additional materials the facility is permitted to use should not make up a significant portion of the fuel stream and should cause no measurable change to the facility's HCl emissions, which are over 72 times less than the MACT major source threshold of 10 tons per year. The facility has also submitted supplier information showing that the additional materials the facility was permitted to use under construction permit CB are similar in composition to the clean wood the facility was originally permitted for. The facility will continue to perform biennial source testing for HCl to establish the emission factor used to quantify the emissions. The facility will also continue the periodic testing for PM as a surrogate to metal HAPs as required by the area source MACT. The resin that makes wood "resinated" does not contain HCl. It is also not expected that the facility would use a significant percentage of resinated wood based on fuel availability and boiler design. If HCl or formaldehyde testing indicates a higher emission factor, new emission factors will need to be developed.

See Section I.A above, for discussion of the general adequacy and enforceability of the permit's synthetic minor HAP limits, which were established during construction permitting. Source test and heat input conditions related to the combustion of resinated wood are supplemental to (and operate in conjunction with) those pre-established limits and supporting conditions for constraining PTE below major source thresholds. It is standard practice, consistent with many EPA regulations, for permits to require the establishment of operating parameters (such as a maximum percentage heat input), and compliance with such operating parameters established pursuant to permit requirements remains enforceable under the permit despite the measured value not being specifically listed on the face of the permit. The Department enforces violations of PTE limits, and in the event of any

[1] Allendale Biomass Construction Application (October 2016) at page 4

miscalculation by the facility in its prior fuel analysis or emission estimates, the facility must constrain operations and emissions within permitted PTE levels to avoid enforcement and remain a minor source of HAP.

2. The commenter states: "Aside from Resinated Wood, DHEC and Allendale Biomass Also Have Not Demonstrated that the Facility's Maximum Emissions Utilizing the Other Authorized Fuels is Below the HAP Major Source Threshold." The commenter reiterates its position that more specific fuel parameters are needed to limit PTE, given variability in factors such as chlorine content, moisture content, and contaminants.

   Department's Response

   There is no source testing data available that would indicate a facility of this size would have individual HAP emissions and total HAP emissions greater than the major source MACT thresholds. The boiler is 314 MMBtu/hr in capacity and has estimated HAP emissions of 4.5 tons per year for the highest single HAP benzene and 13.8 tons per year for total HAPs. Source testing for selected HAPs has indicated these estimates are conservative.

   The facility will continue to perform Department approved biennial source testing for HCl emissions utilizing a fuel mixture that would be expected to provide the highest HCl emissions. This requirement has been added to the Title V permit to ensure appropriate emission factors are used for calculating emissions and verifying compliance with PTE limits. Under Condition C.17, the facility must sample the fuel burned for chlorine content during this biennial source test and include records of chlorine concentration of fuel combusted in the source test summary report.

   Regarding moisture content, the six source tests performed between the Allendale facility and the duplicate Dorchester facility shown in Table 1 below of this document resulted in an average moisture content of 43.49% with a standard deviation of 1.35%. Although there is no upper limit to the moisture content, testing has demonstrated a stable moisture content. If the facility does use the additional materials allowed in construction permit CB, they would only make up a fraction of the total wood used. The pallet and crate material would also have a lower moisture content since they come from dried lumber.

   The commenter also discusses variability in contaminant levels. The Department notes that the pallets and crate material do not include treated lumber. Conditions C.7, C.12 and C.13 of the permit require the facility to keep records of the amounts and types of all fuels burned. Unlike a liquid fuel such as waste oil, contaminants in solid samples do not homogenize, making

sampling to find contaminants impractical. Prior source testing has shown emissions to be well below PTE limits:

Table 1 – HCl and PM Source Testing Results					
Facility/ Source Test Date	**HCl (lb/MMBtu)***	**PM (lb/MMBtu)**	**Fuel Type**	**Fuel Chlorine ppm**	**Fuel Moisture (%)**
Allendale / Mar-14[2]	0.00010	0.00274	Clean Wood Waste	54.7 Wet	41.9
Allendale / Dec-15[3]	<0.0000691**	0.00585	Clean Wood Waste	<57 Wet**	42.5
Allendale / Dec-17[4]	<0.000081**	0.0058	Clean Wood Waste	<61 Wet**	42.7
Dorchester / Mar-14[5]	<0.0000854**	0.00216	Clean Wood Waste	<62 Wet**	45.8
Dorchester / Dec-15[6]	<0.000163**	0.0103	Clean Wood Waste	34 Wet	44.70
Dorchester / Dec-17[7]	<0.00007**	0.0016	Clean Wood Waste	<46 Wet**	43.34

* Source test results were converted to lb/MMBtu based on steam production at the time of the source test.
** Below detectable range

For HCl, the worst-case test, and only test that had detectable HCl emissions, was March 2014 for the Allendale facility. The result was 0.0001 lb/MMBtu. This equates to an annual HCl emission rate of 0.13 tons per year. Regarding metal HAPs, the area source boiler MACT limit for PM is 0.03 lb/MMBtu. The biennial testing in the table above demonstrates the emissions are well below the limit.

[2] DHEC approved source test summary for Allendale Biomass dated December 16, 2014.
[3] DHEC approved source test summary for Allendale Biomass dated February 18, 2016
[4] DHEC approved source test summary for Allendale Biomass dated March 15, 2018
[5] DHEC approved source test summary for Dorchester Biomass dated October 30, 2014
[6] DHEC approved source test summary for Dorchester Biomass dated February 18, 2016
[7] DHEC approved source test summary for Dorchester Biomass dated March 15, 2018

The average of these six tests is 0.0047 lb/MMBtu of PM which is over 6 times lower than the MACT standard.

See Section I.A above, for discussion of the general adequacy and enforceability of the permit's synthetic minor HAP limits, which were established during construction permitting.

C. Comment: The Draft Permit Lacks Monitoring, Recordkeeping, and Reporting Sufficient to Assure that the Facility Only Uses Authorized Fuels. Specifically, the commenter argues that additional monitoring mechanisms for verifying that wood combusted meets permit requirements are needed in the permit. The commenter also asserts that the Department must at a minimum continue to require biennial testing for HCl.

Department's Response

A determination of the adequacy of monitoring is a context-specific determination.[8] In this case, with respect to the commenter's concerns about verification of fuel use, the Title V permit contains several conditions requiring the facility to record the types and amounts of each type of fuel utilized.

For example, Condition C.7 contains the following:

> (40 CFR §60.49b(d)(2)) The owner or operator shall record and maintain records of the amount of each fuel combusted during each calendar month.
> (40 CFR §60.49b(w)) The reporting period for the reports required under this subpart is each 6 month period. All reports shall be submitted to the Department and shall be postmarked by the 30th day following the end of the reporting period.

Condition C.12 also requires fuel record keeping along with the differentiation of resinated wood:

> (S.C. Regulation 61-62.5, Standard No. 5.2, Section IV(3)) The owner or operator shall record monthly records of the amounts and types of each fuel combusted and maintain these records on site. Resinated wood pellets and chipped or ground resinated wood shall be differentiated from other wood waste in these records.

[8] See In the Matter of United States Steel Corp. – Granite City Works, Order on Petition No. V-2009-03, at 7 (E.P.A. Jan. 31, 2011), available at https://www.epa.gov/sites/production/files/2015-08/documents/uss_response2009.pdf.

The requirement in Condition C.7 is also repeated in Condition C.13. There are also several conditions in the Title V permit requiring fuel analysis. Condition C.9 requires a fuel analysis if a new fuel is added to the allowable fuels. Condition C.17 requires the facility to maintain documentation demonstrating the fuel used is not a solid waste. The condition also requires the chlorine concentration of the fuels to be measured during source testing. The facility also performs weekly grab samples of the fuel to determine heat content.

The boiler and fuel delivery system is designed to burn chipped woody biomass. The fuel delivery system is also outfitted with magnets to keep any metal contaminants from damaging the boiler. The facility is also subject to routine and unannounced inspections by the Department.

Consistent with the commenter's request, Condition C.21 continues to require the permittee to conduct biennial source testing for HCl. In addition, Condition C.17 requires sampling for chlorine content during the biennial HCl source testing. The Department considers the above-referenced fuel-related conditions in the permit to be adequate for this facility, particularly given the permit's other testing, monitoring, and recordkeeping requirements for verifying emissions and compliance with permit limits.

D. Comment: DHEC and the Facility have Failed to Explain How the Emission Factors for HAPs Demonstrate Compliance with MACT Avoidance Limits.

1. Comment: On the Whole, NCASI Emission Factors are Substantially Lower Than AP-42 Emission Factors.
2. Comment: Without Adequately Justifying the Use of Lower Emission Factors, Allendale Biomass's PTE Must Be Calculated Using the Higher of the AP-42 and NCASI Emission Factors.

Department's Response

The Department uses the following hierarchy for the estimation of emissions:

1. Continuous Emission Monitoring (CEMs)
2. Site Specific Source Testing
3. Industry or Source Specific Emission Factors
4. Generic Emission Factors

In construction permit 0160-0022-CA, the facility chose to use emission factors developed by the National Council for Air and Stream Improvement (NCASI)[9] where available. These factors were approved by the Department and the permit

[9] NCASI Technical Bulletin 858, Section 5.8.1, Tables 20A and 20B, pp 93-96.

was made available for a 30-day public comment period in 2011[10]. NCASI is an independent, non-profit research institute that focuses on environmental and sustainability topics relevant to forest management and the manufacture of forest products. These factors for wood fired boilers more closely represent the types of wood the facility combusts. When a NCASI factor was not available for a particular pollutant, the AP42 factor was used. There are only two exceptions. The first is when the NCASI and AP42 factors were identical, then the AP42 was often listed as the emission factor used. The second exception was for HCl. Since the facility performs biennial source testing, the most current source test is used. The source tests for HCl are typically below the minimum detection range so the minimal detectable level is conservatively used as the factor.

In the hierarchy for estimating emissions, the NCASI factors would be considered an industry specific factor while the AP42 factors would be considered generic. The facility was also required to conduct source tests for four different HAPs once the boiler was constructed and operating. The boiler's exhaust was tested for formaldehyde, benzene, acrolein, and acetaldehyde[11]. The test results for benzene, acrolein, and acetaldehyde were each below the minimum detectable range. The result of the formaldehyde test (the only pollutant that was detectable) was 62 times lower than the AP42 emission factor and 18 times lower than the NCASI factor. The emission factors relied upon for the Title V permit are from Department approved factors in Construction Permit CA and the periodic source tests for HCl.

II. Comment: The Draft Permit's Algorithms Attachment is Not Sufficient to Assure Compliance with PSD and MACT Avoidance.

Department's Response

The commenter expresses concern that the requirement to use the algorithm and emission factors in Condition C.6 is not an enforceable condition. In addition to the language quoted by the commenter, Condition C.6 requires that "[r]eports of the calculated values and the twelve-month rolling sum, calculated for each month in the reporting period *based on the emission factors, operating parameters, and algorithms in the Attachment-Algorithms*, shall be submitted semiannually." (Emphasis added). Also, in response to comments received, the additional clarification that emissions "shall be calculated … using the calculations and emission factors in the Attachment-Algorithms" has been specifically added to Condition C.6. Together with the remainder of Condition C.6, this language ensures that the requirement to use the attached algorithm and emission is clear and enforceable.

[10] DHEC Public Notice #11-038-TV-C-H

[11] DHEC approved source test summary for Allendale Biomass dated December 16, 2014.

The commenter also requests that revisions to the attachment be processed as a significant permit modification[12]. A significant modification is required for any of the following[13]:

- Involve a significant change in existing monitoring permit terms or conditions, or constitute a relaxation of reporting or recordkeeping permit terms or conditions.
- Require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or visibility or increment analysis;
- Seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
    - A Federally enforceable emissions cap assumed to avoid classification as a modification under any provision of Title I;
    - An alternative emissions limit approved pursuant to regulations promulgated under Section 112(i)(5) of the Act; and
- Are modifications under any provision of Title I of the Act, except those that qualify for processing as administrative permit amendments under Section 70.7(d).

Certain changes to the Attachment may or may not require a significant modification. The facility is required to use the appropriate type of modification for each type of permit revision. These changes are also reviewed by the EPA. It is not possible to specify what type of revision is required for a change in a permit because they need to be treated on a case-by-case basis.

A. Comment: The Arbitrary Selection of Emission Factors Renders the Draft Permit's Monitoring Conditions Incapable of Assuring Compliance with Limits on HAP Emissions.

Department's Response

As discussed above in Section I.D, available data indicates that the chosen emission factors are adequate and will not underestimate the HAP emissions. Source testing while the boiler was operating at maximum capacity has demonstrated that the NCASI factors are more appropriate where available and still provide a significant overestimation of the HAPs. The emission factors used were originally presented in the construction permit application for 0160-0022-CA. This permit was reviewed by the public and EPA as part of the synthetic minor permitting process. The emission factors used are readily used by facilities in the forestry industry. The facility has performed source testing for some of the higher predicted HAP emissions. Further justification of the emission factors is not warranted without evidence any are incorrect.

[12] Comments submitted by the Environmental Integrity Project, (Dec 2018) p. 13.
[13] S.C. Regulation 61-62.70.7

B. Comment: The Permit and Attachment Improperly Allow the Facility to Revise Emission Factors Without a Significant Permit Modification. Specifically, the commenter asserts that the updating of emission factors after source testing without a permit modification renders the PTE limits unenforceable.

Department's Response

As mentioned above in Section II, any change to any part of the Title V permit will require the facility to submit the appropriate type of revision request. It is not practicable to list specific emission factors in a permit where those emission factors are based on source testing and are subject to change. The HCl and PM emission factors based on the source test are required to be based on the highest of the previous three source tests. Using the highest of the three source tests and requiring the facility to test under the worst-case conditions should result in a more conservative emission factor. The emission factors are not limits. They are tools used for the monitoring of compliance with annual limits. The general public can review the algorithms and monthly emissions calculations, including emission factors used, at any time after the facility has submitted its monitoring reports. Source test data and updates to emission factor(s) are also publicly available upon request. The Title V permit was not designed for revisions on a continual basis, and the absence of a significant permit modification for every source test-based increase to an emission factor does not render the PTE limits unenforceable. The algorithm document in the permit clearly identifies where use of emission factors from the highest of the last three source tests is required. If the emission factor must be increased based on source test data, the facility must demonstrate compliance with PTE limits using the higher emission factor.

C. Comment: It is Especially Important that DHEC Not Allow a Downward Revision of Emission Factors Without a Significant Permit Modification.

Department's Response

See response in Section II.B above. The facility has chosen to use source tests for pollutants of concern as part of monitoring to demonstrate compliance with annual federally enforceable limits. Although a source test provides a snapshot in time of a source's emissions, it provides more accurate results than an emission factor. Additionally, the permit requires the facility to ensure that "source tests are conducted while the source is operating at the maximum expected production rate or other production rate or operating parameter which would result in the highest emissions for the pollutants being tested." (Condition C.5). As long as the facility is required to use the highest of the previous three source tests and is required to perform regular source tests, using source test values will provide more conservative emission calculations over time.

D. Comment: The Attachment's Uncontrolled PM Emission Factors Appear to Incorrect and Incomplete [sic]. Specifically, the commenter asserts that several of the listed emission

factors for PM are lower than those listed in AP-42. The commenter also seeks confirmation that in a "No ESP" scenario, the boiler emissions are routed to the cyclones and condensable emissions are accounted for. The commenter also asks what the emission factor listed for $PM_{2.5}$ is referring to.

Department's Response

The emission factors for particulate matter (PM) have been clarified in response to comments and are listed correctly in the permit Attachment-Algorithms. The listed emission factors for PM Filterable No ESP, PM_{10} No ESP, and $PM_{2.5}$ No ESP each correspond with the sum of the AP42 factors for bark/wet wood with a mechanical collector plus the AP42 factor for condensable emissions for operation when the ESP is off-line. These additional details are noted in the Attachment-Algorithms. The multiclones are inherent to the boiler and emissions are always routed through them. There is no physical bypass of the multiclones.

E. Comment: The Permit Fails to Explain How the Facility Shall Calculate Fuel Heat Content

Department's Response

The heat content variable in the Attachment's emissions equations corresponds with the 6-month average heat content of fuel received. For unresinated woodwaste, it is to be determined by weekly grab samples tested using method ASTME711. The method required to determine the heat content for purposes of the emission calculations has been clarified in the algorithms attachment.

III. Comment: The Draft Permit Lacks Sufficiently Specific Limits on the Operating Parameters of the Electrostatic Precipitator (ESP). Specifically, the commenter addresses Condition C.19 and asserts that the permit fails to incorporate specific, enforceable limits that require the facility to operate the ESP within the established operational ranges. The commenter also asserts that the permit must incorporate limits on the ESP's secondary voltage and current as well as the secondary corona power.

Department's Response

The facility is required to monitor the ESP secondary power to demonstrate compliance with the less than 250.0 ton per year PSD avoidance limit. The ESP is not needed to comply with the Standard 1 limit. The "Total Secondary Power" is one of the prescribed methods for monitoring ESPs for 40 CFR 63 Subpart JJJJJJ (Area Source Boiler MACT). The total secondary power is the product of the secondary voltage and the secondary current. The secondary voltage will drop if there is a malfunction such as grounded electrode. The secondary current can drop if a collection plate is not cleaned or rapped appropriately. Because the secondary power is the product of the secondary voltage and secondary current, a drop in either one of these will result in a drop in total secondary power. The secondary power is selected as the

monitored parameter since a problem with either the voltage or current will be manifested in the secondary power[14]. Proposed ranges for the ESP's secondary power input were received by the Department on August 27, 2018 and approved on September 5, 2018. Operation outside of an established range does not necessarily equal a violation of the underlying limit that is being monitored. This is especially true when it is an annual limit such as the less than 250.0 tpy PSD avoidance limit for particulate matter. The Department maintains records of facilities' required operating ranges but does not typically place them in the permit since they can often change upon additional source testing. As discussed above, it is standard practice, consistent with many EPA regulations, for permits to require the establishment of operating parameters (such as secondary power input ranges), and compliance with such ranges established pursuant to permit requirements remains enforceable under the permit despite the measured value not being specifically listed on the face of the permit.

IV. Comment: The Draft Permit's PM and Opacity Monitoring Conditions Fail to Assure Compliance with Applicable Requirements.

Department's Response

The following table summarizes the applicable opacity and PM limits and the associated monitoring and justification:

Table 2 – PM and Opacity		
Boiler		
Regulation	**Limit**	**Monitoring**
SC Reg. 61-62.1, Section II.E	<250.0 TPY for PM(filterable), PM_{10}, $PM_{2.5}$	ESP Secondary Power Monitoring, Source Testing[1]
SC Reg. 61.62.5 Standard 1	Opacity 20% or less	COMs[2]
SC Reg. 61.62.5 Standard 1	PM <0.6 lb/MMBtu	Source Testing[3]
40 CFR 60 Subpart Db	Opacity 20% or less	COMs[4]
40 CFR 60 Subpart Db	PM < 0.030 lb/MMBtu	Initial Source Test, COMs[5]
40 CFR 63 Subpart JJJJJJ	PM < 0.030 lb/MMBtu	Periodic Source Test, COMs[6]
Cooling Tower, Ash Silo, Dry Sorbent Silo		
Regulation	**Limit**	**Monitoring**
SC Reg. 61-62.5 Standard 4 (Equipment IDs CT, AS, DSS)	Opacity 20% or less	Visual Inspections[7]
SC Reg. 61-62.5 Standard 4 (Equipment IDs CT, AS, DSS)	PM < $4.10P^{0.67}$ P = process weight rate	Not required[7]

1. The limit is a facility wide annual PSD avoidance limit. There is no specific monitoring prescribed by the regulation. The facility has chosen to monitor the secondary power on the ESP and will also rely on source testing required by Standard 1 and 40 CFR 63 Subpart JJJJJJ. The uncontrolled filterable PM emission estimate based on the AP42 factor of 0.35 lb/MMBtu for bark/Wet wood is 481 tons per year. The source test limit for 40 CFR 63

[14] EPA CAM Technical Guidance Document – A.25 ESP for PM Control (June 2002) pp 2-3

Subpart JJJJJJ is 0.03 lb/MMBtu. The required periodic source testing and the monitoring of the secondary power of the ESP each shift will be used by the source to demonstrate compliance.

2. The COMs is required by Section IV of Standard 1. The Standard requires 6-minute opacity measurements. This continuous direct monitoring will be used to demonstrate compliance.
3. Standard 1 includes a 0.6 lb/MMBtu PM limit. The facility will conduct PM testing for both Standard 1 and Subpart JJJJJJ's more stringent 0.03 lb/MMBtu limit using the MACT source testing requirements. Violation of the Standard 1 limit would be unlikely since the uncontrolled emissions are 0.35 lb/MMBtu which is 58% of the limit.
4. The new source performance standard for boilers requires continuous opacity monitoring to show compliance with the 20% opacity limit. The continuous monitoring provides direct evidence of compliance with the standard.
5. The new source performance standard for boilers requires an initial source test and continuous opacity monitoring to show compliance with the 0.03 lb/MMBtu PM limit. The periodic testing required by Standard 1 and the area source boiler MACT will also show compliance with the NSPS PM limit.
6. The area source MACT requires periodic source testing and continuous opacity monitoring to comply with the 0.03 lb/MMBtu PM limit. The source testing schedule will vary with the margin by which the previous source test complies with the limit (either every three or five years).
7. The uncontrolled particulate emissions for the cooling tower, ash silo, and sorbent silo are each less than 1 lb/hr and each are well under the Standard 4 PM limit. Because uncontrolled emissions are below the regulatory limit, no monitoring for PM is required by the Standard. With the low uncontrolled PM emissions from each source, there should be no visible emissions. However, the facility will perform weekly visible inspections.

The facility is monitoring for PM and opacity as the regulations require. When a regulation does not specify specific monitoring such as the synthetic minor limits for particulates, the facility is monitoring the ESP each shift and using periodic source testing to comply with these annual limits. Section 70.6 of the Title V regulation requires periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of source's compliance with the permit. The monitoring, testing, recordkeeping, and reporting is sufficient for the facility to show compliance with the opacity and PM limits.

A. <u>Comment</u>: The Draft Permit's Monitoring Conditions for the ESP are Too Vague to Assure Compliance with PM. Specifically, the commenter seeks clarification regarding the "secondary power" parameter and asserts that the permit must specify exactly what parameters are to be monitored to ensure proper operation of the ESP. The commenter reasserts that the permit should provide for monitoring of secondary voltage, secondary current, and secondary corona power. The commenter adds that monitoring at each shift during ESP operation is insufficient, and more frequent monitoring should be required.

<u>Department's Response</u>

The monitoring of secondary ESP power is an acceptable method to ensure proper operation of an ESP. As mentioned in Part III, monitoring of secondary power (the product of the secondary voltage and secondary current) is a prescribed method in the area source boiler MACT (40 CFR 63 Subpart JJJJJJ – Table 7) although this facility is using COMs for compliance with that regulation. The facility is required to record the secondary power each shift during source operation. The commenter states, "The PM emission limits in Conditions C.8 and C.13 apply at all times, yet the draft permit only requires that each monitored parameter shall be recorded each shift during operation of the ESP." Condition C.8 is a Standard 1 limit that does not require use of the ESP to demonstrate compliance. Condition C.13 is an NSPS Subpart Db limit that prescribes opacity monitoring using a COMs. The commenter is correct that the monitoring requirement should yield reliable data from the relevant time period[15]. The facility agreed to monitoring the ESP each shift in the original construction permit. This monitoring is sufficient to yield reliable data over each monthly period for which emissions must be calculated. Furthermore, as provided in the response under Section IV above, the combined monitoring, testing, recordkeeping, and reporting provisions included in the permit are sufficient for the facility to show compliance with PM limits.

B. Comment: "The Draft Permit Lacks Adequate Monitoring to Assure Compliance with the Applicable Opacity Limits under the South Carolina State Implementation Plan." In particular, the commenter argues that the draft permit lacks sufficient monitoring to ensure compliance with S.C. Regulation 61-62.5, Standard No. 4, Section IX, and Standard No. 1, Section I.

Department's Response

The likelihood that a source will exceed the Standard 4 opacity limit factors into the level of monitoring required. There are no expected visual emissions from any of the facility's sources, so a weekly schedule was developed in the original construction permit for observation during source operation. The commenter encourages the use of a certified observer to perform a Method 9 opacity reading in the event visible emissions are observed. However, a full Method 9 inspection is not needed when there are no visible emissions. In addition, although the inspection need not be performed by a certified observer, the permit does require the observer to "be trained and knowledgeable about the effects on visibility of emissions caused by background contrast, ambient lighting, and observer position relative to lighting, wind, and the presence of uncombined water." Should any abnormal emissions (*i.e.*, any visual emissions) be observed, corrective action must be taken and documented:

[15] Comments submitted by the Environmental Integrity Project, (Dec 2018) p. 17.

> Condition C.10: *Monitoring: The owner/operator shall perform a visual inspection on a weekly basis during source operation. Logs shall be kept to record all visual inspections, noting color, duration, density (heavy or light), cause, and corrective action taken for any abnormal emissions. If a source did not operate during the required visual inspection time frame, the log shall indicate such. The owner/operator shall submit semiannual reports. The report shall include records of abnormal emissions, if any, and corrective actions taken. If the unit did not operate during the semiannual period, the report shall state so.*

(Emphasis added). As seen above, inspection logs must be kept, and reporting is required. These monitoring requirements were previously established and became final in the underlying construction permits for the facility, and they yield sufficiently reliable data to document opacity compliance given the nature of the source and its activities.

Emission controls and facility operations support the expected absence of visible emissions or opacity exceedances at this facility. The ash silo (Equipment ID AS) and sorbent silo (Equipment ID DSS) are each equipped with bin vent filters with a 99% efficiency. The particulate emissions from each of these sources is less than 1 lb/hr. Under normal operating conditions there should be no expected emissions. If a bin vent were to deteriorate, there could be a possibility of visible emissions during loading of a silo. The weekly inspections requirement will facilitate corrective action before a 20% opacity will be exceeded. The cooling tower (Equipment ID CT) also has an emission rate less than 1 lb/hr. The emissions from the cooling tower are based on dissolved solids in the water. The operation of the cooling tower is continuous and the Department cannot imagine any scenario where there would be enough dissolved solids in the cooling water that could cause visible emissions exceeding a 20% opacity. Weekly visual inspections are therefore adequate to ensure these sources do not exceed a 20% opacity. All other activities identified by the commenter such as fuel handling, fuel piles, and ash handling are not expected to be sources of visible emissions based on humidity content or their being closed systems. Moreover, potential emissions from ash handling are covered under the fugitive dust plan and will be controlled by water spraying.

The commenter also claims that monitoring of the ESP should be added to ensure compliance with the Standard 1 opacity limit. For woodwaste boilers, Standard 1, Section IV(A)(2), specifies what monitoring is required for ensuring compliance with Standard 1:

> *The owner or operator of any woodwaste boiler, not equipped with a wet scrubber, will be required to install, calibrate, operate, and maintain continuous monitoring system(s) approved by the Department for the measurement of opacity....*

Consistent with this regulatory requirement, Condition C.7 of the Title V permit requires operation and maintenance of a continuous opacity monitor, as well as associated recordkeeping and reporting.

As discussed in the regulatory section of the Title V's statement of basis, the ESP is not required for compliance with the 0.6 lb/MMBtu PM limit since the uncontrolled emission factor is 0.35 lb/MMBtu[16]. Monitoring of the ESP's secondary power input has been added to the Title V permit for compliance with the less than 250.0 ton per year synthetic minor avoidance limit for particulates. This monitoring in Condition C.19 includes the establishment of operating parameter ranges for secondary power input to ensure proper operation of the ESP. Proposed ranges were received by the Department on August 27, 2018 and approved on September 5, 2018.

V. Comment: "The Draft Permit Fails to Require the Facility to Take Adequate Measures to Control Fugitive Dust." Specifically, the commenter argues that the fugitive dust control plan identified in the draft permit is inadequate and does not ensure control of fugitive dust from fuel delivery, fuel loading and unloading, fuel storage, and ash transport and storage.

Department's Response

The facility was required to submit a fugitive dust plan in conjunction with the issuance of the original construction permit. The fugitive dust plan was approved by the Department, and all existing facility operations are subject to the requirements of the fugitive dust plan. The fugitive dust plan condition, Condition C.15, simply incorporates the requirements of the existing fugitive dust plan adopted under the construction permit. Additional detail or requirements to the plan the commenter suggests[17] such as adding expansive foam to seal conveyors or fully enclosing fuel storage buildings is not necessary unless there is a specific problem with fugitive emissions at those specific sources that these measures would solve. Moreover, it is unlikely fugitive dust from these activities would leave the property line. Condition C.15 has been revised to require the facility to update its plan as needed and resubmit the plan for approval if the facility or the Department determines additional dust control measures are needed or current dust control measures need modification.

VI. Comment: The Draft Permit Does Not Assure that the Facility Safely Handles Wood Dust in Compliance with the Requirement to Design and Maintain a Safe Facility Under the Clean Air Act Section 112(r)(1) General Duty Clause.

Department's Response

[16] AP-42 5th Ed, Tables 1.6.1/2003 Update (Filterable Particulate Matter for Boilers with Mechanical Collectors)

[17] Comments submitted by the Environmental Integrity Project, (Nov 2017) p. 10.

The EPA indicated in the 1997 Shintech decision[18] and in prior rulemaking promulgations that compliance with 40 CFR § 68.215, as applicable, will satisfy the legal obligations of section 112(r) for purposes of part 70, and that Title V permits need not specifically address the General Duty Clause. Therefore, no modification of the permit is necessary with respect to the General Duty Clause. The Department does note that EPA also states that "Section 112(r)(1) remains a self-implementing requirement of the Act, and EPA expects and requires all covered sources to comply with the general duty provisions of 112(r)(1)."[19] Therefore, it would be improper to grant a permit shield identifying section 112(r)(1) as inapplicable. The draft Allendale Title V permit contains no permit shield for any requirements. Based on the past EPA response to the Shintech petition, the Department disagrees that section 112(r)(1) is an "applicable requirement" for purposes of Title V and proposes no changes in the proposed permit.

Concluding comments by commenter: Due to the deficiencies described above, the revised draft Title V permit for the Allendale Biomass Plant does not ensure that the facility will control its air pollution as required by the Clean Air Act. We urge South Carolina DHEC to revise the Title V permit to address our concerns. South Carolina DHEC must provide a clear explanation in the statement of basis for the Title V permit that explains how the proposed permit that it sends to U.S. EPA assures the facility's compliance with applicable requirements.

Department's Response

The Department has revised the draft permit where appropriate to address the commenter's concerns as summarized on page one of this document. The statement of basis has been revised to reflect specific changes to the draft permit.

[18] *In the Matter of Shintech Inc. And Its Affiliates Polyvinyl Chloride Production Facility*, Order on Permit Nos. 2466-VO, 2467-VO, and 2468-VO, 1997 EPA CAA Title V LEXIS 8, at *24 (E.P.A. Sept. 10, 1997).
[19] *Id*.

Attachment - 2017 Response to Comments

During the 2017 comment period, comments were received from the Environmental Integrity Project on behalf of: South Carolina Coastal Conservation League, South Carolina State Conference of the NAACP, Whitney M. Slater Foundation, New Alpha Community Development Corporation, Kingdom Living Temple Church, Dogwood Alliance, South Carolina Chapter of the Sierra Club, Partnership for Policy Integrity, Natural Resources Defense Council, Our Children's Earth, Center for Biological Diversity, Dr. Robert A. Parr, and itself.

The Department has reviewed each comment and revised the draft permit where appropriate based on some of the comments received. The following is a summary of the changes to the draft permit since it originally went on public notice in 2017:

- (Condition C.6) Condition revised; added individual and combined hazardous air pollutants (HAP) to the synthetic minor limits and monitoring, reporting and recordkeeping conditions; added provisions for use of the Attachment – Algorithms for calculating emissions.
- (Condition C.15) Condition revised; added a requirement to update the fugitive dust plan if additional controls or requirements are needed.
- (Condition C.16) This condition was removed since it referred to an insignificant activity only.
- (Condition C.18; now Condition C.17) Condition revised; replaced reference to biomass with clean wood; added the definition for clean wood and that a construction permit may be required depending on the fuel and potential emissions if a new type of fuel is to be added;
- (Added Condition C.19) Condition added; added a requirement to establish operating ranges and monitor secondary power input on the electrostatic precipitator (ESP).
- (Added Condition C.20) Conditions added; added a requirement to conduct an initial source test for HCl and formaldehyde if the facility begins to use resinated wood, establish a maximum allowable percentage heat input from use of resinated wood, and repeat the source testing any time the facility wishes to increase percentage heat input from resinated wood above the maximum allowable level.
- (Added Condition C.21) Condition added; requires source testing to establish, verify, or reestablish the emission factor for HCl emissions every two years.
- (Attachment "Algorithms") This attachment has been added listing the algorithms, emission factors, and operating parameters used to calculate emissions for compliance with the synthetic minor limits.

<u>2017 comments submitted by the Environmental Integrity Project</u>

I. <u>Comment</u>: The Draft Permit Fails to Adequately Define the Type of Biomass that May be Used at the Facility.

   a. The commenter requests: "South Carolina must amend the permit to specify the types of biomass the facility is authorized to burn and to require the facility to perform monitoring, recordkeeping and reporting to verify that the facility only utilizes fuel that meets that criteria. Furthermore, due to the significant impact that a change in the type of biomass the facility burns can have on the facility's emissions, the permit must require the facility to obtain a permit modification if it wishes to utilize biomass fuel (or other fuel) that is different from what is authorized under the permit. This

restriction appeared in the facility's original construction permit but is omitted from the draft Title V permit."[20]

Department's response:

The original construction permit (0160-0022-CA) used the term "clean wood" as the allowable fuel for the biomass boiler. Clean wood is defined in S.C. Regulation 61-62.1 (Definitions) as - untreated wood or untreated wood products including clean untreated lumber, tree stumps (whole or chipped), and tree limbs (whole or chipped). Clean wood does not include yard waste, which is defined elsewhere in this section, or construction, renovation, and demolition waste (including but not limited to railroad ties and telephone poles). The facility was issued a construction permit (0160-0022-CB) on March 16, 2017, that expanded the types of fuels the facility could use to include chipped wood pallet and crate material, wood pellets made from resinated wood, chipped or ground resinated wood, and wood from natural disasters such as ice storms, tornado/wind storms, or floods.

To clarify the type of fuel that may be burned, "clean wood as defined in S.C. Regulation 61-62.1" will be added to the allowable fuels condition C.17 and the term "biomass" will be removed. As amended, the Title V permit will allow the burning of clean wood as defined in S.C. Regulation 61-62.1, chipped wood pallet and crate material, wood pellets made from resinated wood, chipped or ground resinated wood, and wood from natural disasters such as ice storms, tornado/wind storms, or floods. Yard waste will not be permitted to be used as fuel.

The draft Title V permit includes monitoring, recordkeeping and reporting conditions to verify that the facility only utilizes fuel that meets the specified criteria. Condition E.4 of the draft permit requires the facility to comply with 40 CFR Part 63, Subpart JJJJJJ, including requirements to keep records of the type and amount of all fuels burned in each boiler. Permit Conditions C.12, C.13, E.11, and E.14 further require the facility to record and maintain monthly records of the amounts and types of each fuel combusted by each boiler, and to differentiate resinated wood pellets and chipped or ground resinated wood from other wood waste in the records. These requirements are in addition to other monitoring, recordkeeping, and reporting requirements designed to verify compliance with all applicable limits and requirements.

Condition C.17 of the draft Title V permit has also been revised to include the requested requirement that a construction permit may be required depending on the nature of the fuel and potential emissions.

b. The commenter states "Allendale Biomass has not performed the emissions testing sufficient to justify allowing it to burn any biomass whatsoever, and the draft permit

[20] Comments submitted by the Environmental Integrity Project, (Nov 2017) p. 2, 2nd paragraph.

does not assure the facility's compliance with emission limits that would apply regardless of the type of biomass that is burned at this facility."[21]

Department response:

Hydrochloric acid (HCl) and hazardous metals emissions are the highest potential non-organic HAP emissions from biomass boilers. The major source MACT (40 CFR Part 63, Subpart DDDDD) requires testing for CO and particulate matter (PM) as a surrogate for the metal HAPs while the area source MACT (Subpart JJJJJJ) only requires testing for particulate matter (PM) as a surrogate for the metal HAPs. The following table (Table 1) contains HCl and PM source test results for this facility and the identical Dorchester Biomass facility:

Table 1 – HCl and PM Source Testing Results

Facility/ Source Test Date	HCl (lb/MMBtu)*	PM (lb/MMBtu)	Fuel Type	Fuel Chlorine ppm	Fuel Moisture (%)
Allendale / Mar-14[22]	0.00010	0.00274	Clean Wood Waste	54.7 Wet	41.9
Allendale / Dec-15[23]	<0.0000691**	0.00585	Clean Wood Waste	<57 Wet**	42.5
Allendale / Dec-17[24]	<0.000081**	0.0058	Clean Wood Waste	<61 Wet**	42.7
Dorchester / Mar-14[25]	<0.0000854**	0.00216	Clean Wood Waste	<62 Wet**	45.8
Dorchester / Dec-15[26]	<0.000163**	0.0103	Clean Wood Waste	34 Wet	44.70

[21] Comments submitted by the Environmental Integrity Project, (Nov 2017) p. 2
[22] DHEC approved source test summary for Allendale Biomass dated December 16, 2014.
[23] DHEC approved source test summary for Allendale Biomass dated February 18, 2016
[24] DHEC approved source test summary for Allendale Biomass dated March 15, 2018
[25] DHEC approved source test summary for Dorchester Biomass dated October 30, 2014
[26] DHEC approved source test summary for Dorchester Biomass dated February 18, 2016

Table 1 – HCl and PM Source Testing Results					
Facility/ Source Test Date	**HCl (lb/MMBtu)***	**PM (lb/MMBtu)**	**Fuel Type**	**Fuel Chlorine ppm**	**Fuel Moisture (%)**
Dorchester / Dec-17[27]	<0.00007**	0.0016	Clean Wood Waste	<46 Wet**	43.34

* Source test results were converted to lb/MMBtu based on steam production at the time of the source test.
** Below detectable range

For HCl, the worst-case test, and only test that had detectable HCl emissions, was March 2014 for the Allendale facility. The result was 0.0001 lb/MMBtu. This equates to an annual HCl emission rate of 0.13 tons per year. Regarding metal HAPs, the area source boiler MACT limit for PM is 0.03 lb/MMBtu. The biennial testing in the table above demonstrates the emissions are well below the limit. The average of these six tests is 0.0047 lb/MMBtu of PM which is over 6 times lower than the MACT standard.

The biomass boiler at the Allendale facility is designed to operate on woody biomass within a certain fuel moisture range. Although only clean wood waste was burned during the source testing, the additional materials the facility is permitted to use should not make up a significant portion of the fuel stream and should cause no measurable change to the facility's HCl emissions, which are over 72 times less than the MACT major source threshold of 10 tons per year. The facility has also submitted supplier information showing that the additional materials the facility was permitted to use under construction permit CB are similar in composition to the clean wood the facility was originally permitted for.[28] The facility will continue to perform biennial source testing for HCl to establish the emission factor used to quantify the emissions. The facility will also continue the periodic testing for PM as a surrogate to metal HAPs as required by the area source MACT.

Additional source testing by the facility for other pollutants, including NO_x, SO_X, and PM, is discussed further below. All source test results show emissions substantially below permit and regulatory limits. This test data, coupled with a range of enforceable permit conditions, including periodic source testing, monitoring, reporting, and recordkeeping requirements, support the Department's issuance of a Title V permit for this facility and provide assurance that only authorized fuels will be burned and emissions will not exceed permitted levels.

c. The commenter states that "The type of biomass burned can dramatically impact the facility's emissions. Biomass can contain sulfur, nitrogen, chlorine and heavy metals,

[27] DHEC approved source test summary for Dorchester Biomass dated March 15, 2018
[28] Allendale Biomass Construction Application (October 2016) at pp 26-35

which can create hazardous air pollutants (HAPs) during combustion. Depending on the levels at which the biomass utilized by Allendale Biomass contain these elements, the facility's emission of sulfur oxides (SO_x), nitrogen oxides (NO_x), hydrogen chloride (HCl), dioxin and furans, and heavy metal emissions will vary."[29]

Department's response

Like the HCl and metal HAPs, which were already addressed above, the facility has performed source testing for NO_x and SO_X, and PM. Source test and other data support the facility's compliance with the enforceable limits set forth in the permit, notwithstanding some variability in fuel makeup.

SO_x has never been demonstrated to be a pollutant of concern from wood derived fuels. The following Table (Table 2) contains AP42 factors for types of wood used in boilers:

Table 2 – AP 42 Factors[30]

Source	NO_x (lb/MMBtu)	SO_2 (lb/MMBtu)	CO (lb/MMBtu)	PM (lb/MMBtu)
Bark / Wet Wood	0.22	0.025	0.60	0.56
Dry Wood	0.49	0.025	0.60	0.44
Wet Wood	---	---	---	0.33
All Fuels with ESP	---	---	---	0.054

As seen in the above table, NO_x emissions are most likely to vary with the type of biomass. The S.C. Regulation 61-62.5, Standard 5.2, NO_x limit of 0.20 lb/MMBtu is based on a 30 day average while the federally enforceable S.C. Regulation 61-62.5, Standard 7, (PSD) avoidance limit of 250.0 tons per year is an annual limit. With required monitoring by the NO_x CEMs and required semiannual reporting, the draft permit assures enforceable compliance with the regulatory limits under the full range of allowed fuels.

Although sulfur content will vary depending on the type of biomass, it should be low compared to fuel such as coal, and SO_2 emissions must remain within permitted limits. The S.C. Regulation 61-62.5, Standard 1, limit for SO_2 is 2.3 lb/MMBtu. On March 30, 2014, the facility performed a stack test on the boiler for SO_2[31]. The test result was 0.04 lb/MMBtu, approximately 57 times less than the limit. The facility is required to test each new type of fuel for sulfur content. The facility has demonstrated compliance with the limit through source testing and continual monitoring of the sulfur content of

[29] Comments submitted by the Environmental Integrity Project, (Nov 2017) p. 2, 1st paragraph.
[30] AP 42, Fifth Edition, Volume 1, Chapter 1: External Combustion Sources – 1.6 Wood Residue Combustion in Boilers, Table 1.6-1
[31] DHEC approved source test summary for Allendale Biomass dated December 16, 2014.

new fuel streams. Further, the Department has been unable to identify any biomass boiler with SO_2 emissions anywhere close to the 2.3 lb/MMBtu/hr limit.

The Area Source boiler MACT (JJJJJJ) requires particulate matter (PM) testing every three or five years depending on the performance test results. The 40 CFR Part 60, Subpart Db NSPS requires an initial source test for PM and the use of a continuous opacity monitor (COM) for continual compliance. The boiler MACT and Standard 1 also require a COM for continual compliance. The PM limits for Standard 1, 40 CFR Part 60, Subpart Db, and 40 CFR Part 63, Subpart JJJJJJ are 0.6 lb/MMBtu, 0.03 lb/MMBtu, and 0.03 lb/MMBtu respectively. The facility has performed three source tests since the beginning of operation with the highest PM result being 0.00115 lb/MMBtu[32]. The stack test results are approximately 26 times lower than the most stringent limit of 0.03 lb/MMBtu. With periodic source testing required and continuous monitoring with the COMs, the permit assures enforceable compliance with the PM limits under the full range of allowed fuels.

The dioxins and furans emissions for this facility are several orders of magnitude less than pollutants such as HCl, formaldehyde, and acetaldehyde for wood waste combustion based on the AP42 emission factors[33]. The additional types of materials the facility is permitted to burn are similar to wood waste and should not cause an increase in these pollutants, in contrast to sources that burn other materials such as chlorinated plastics or tire derived fuel.

In sum, the two regulated emissions that have the most variability based on fuel type, NO_x and PM, each are subject to continuous monitoring to ensure enforceable compliance with the applicable limits.

II. Comment: The draft permit fails to assure the facility's compliance with MACT requirements for hazardous air pollutants.

a. The commenter disagrees that the 2014 and 2015 source tests are sufficient to demonstrate the facility's maximum potential to emit HAPs, especially HCl, is below the applicability for major source MACT.

Department's response

Although organic HAP emissions are low in boilers, the facility tested for several that were expected to be emitted in amounts above the detectable limits. The organic HAPs acrolein, formaldehyde, acetaldehyde, and benzene were tested for on March 30,

[32] DHEC approved source test summary dated February 18, 2016. Result based on the difference between total PM and condensable PM.
[33] AP 42, Fifth Edition, Volume 1, Chapter 1: External Combustion Sources – 1.6 Wood Residue Combustion in Boilers, Table 1.6-3

2014. The only HAP that was detected above the detectable range was formaldehyde at 2.22E-02 lb/hr. With this source test for organic HAPs, the numerous source tests for HCl, as discussed previously in Part I, and the lack of any source tests on similar sources indicating otherwise, the testing conducted on this boiler indicates the boiler is not a major source of HAPs. Further, the facility continues to test particulate matter as a surrogate for metal HAPs in accordance with Subpart JJJJJJ. Although the facility has not utilized any chipped or shaved resinated wood, or resinated wood pellets, in its boiler to date, a condition requiring the facility to perform an initial source test for HCl and formaldehyde within 180 days after the facility utilizes this fuel has been added to the permit. This test will be used to establish emission factors for HCl and formaldehyde from the use of resinated wood.

To further address the commenter's concern, the major source MACT avoidance limits that appeared in the construction permits have been added to the Title V permit. The adequacy and enforceability of the draft Title V permit's synthetic minor limits for HAPs were established in Construction Permit 0160-0022-CA issued to the facility. The applicable limits were not changed by, and remain in force under, Construction Permit 0160-0122-CA. Construction Permit 0160-0022-CA was subject to public notice and comment, and further administrative and judicial review of the Department's final decision were available. As such, the retained and enhanced procedures and requirements for ensuring compliance with the facility's synthetic minor limits may be incorporated into the Title V permit, and their legal and practical enforceability is not an issue subject to further Department or judicial review.

b. The commenter states "The most significant flaw in South Carolina DHEC's analysis is that HCl emissions (and HAP emissions, generally) vary widely depending upon the specific biomass fuel type, and the draft Allendale Biomass permit broadly authorizes the facility to burn almost any kind of biomass other than yard waste." More specifically, the commenter asserts that variability in chlorine concentrations, moisture content, and fuel contamination can result in significant variability in HAP, including HCl, emissions. The commenter requests that the facility conduct continuous HCl monitoring and biennial HCl testing to verify that biomass fuel meets required specifications and that HAP emissions are not in excess of the major source threshold. The commenter also requests that to support the conclusion that the facility has not triggered major source MACT, the permit must limit the facility to firing fuel of the type utilized in the 2014 and 2015 source tests.

<u>Department's response</u>

Although the commenter claims the HAP emissions vary widely based the type of biomass used, there is no source testing data available that would indicate a facility of this size would have individual HAP emissions and total HAP emissions greater than the major source MACT thresholds. The boiler is 314 MMBtu/hr in capacity and has estimated HAP emissions of 4.5 tons per year for the highest single HAP benzene and

13.8 tons per year for total HAPs. Source testing for selected HAPs has indicated these estimates are conservative. The term "biomass" has also been replaced with "clean wood" in the Title V permit, and the facility will not have the ability to burn any type of biomass not specified in the permit without prior Department approval which may include first obtaining a new construction permit depending on the change in potential emissions. As an area source, the boiler MACT (Subpart JJJJJJ) does not require the facility to conduct continuous HCl monitoring or periodic testing for HCl. However, as noted above, the Department is adding a condition to the permit to require biennial HCl testing, as requested, and to require additional testing for formaldehyde and HCl under specified circumstances to verify that significant changes in fuel utilization will not cause HAP emissions to exceed area source limits.

See also the Department's response to comment at II.a above, addressing the Department's inclusion of MACT avoidance limits which were established during construction permitting and are being included in the Title V permit. These limits and supporting conditions serve as legally and practically enforceable mechanisms for further ensuring that emissions will remain below major source levels under the full range of fuel usage.

III. Comment: The Draft Permit Conditions Addressing Particulate Matter and Opacity Do Not Satisfy Title V Requirements.

a. The commenter states: "Facility-Wide PM, PM_{10}, and $PM_{2.5}$ Limits Designed to Restrict the Facility's Potential to Emit Below the Major Source Threshold for New Source Review are Unenforceable Because the Draft Permit Omits the Emission Factors and Equations Used to Demonstrate Compliance." In its discussion of this issue, the commenter specifically requests that DHEC "incorporate the compliance demonstration method into the permit itself, including the algorithm and emission factors to be used to demonstrate the facility's emissions."

Department's response

To address the commenters' concerns about prior notice and availability of the algorithm for calculating emissions and determining compliance, the second draft permit placed on public notice in 2018 included the algorithms, emission factors, and operating parameters used to calculate emissions for compliance with the synthetic minor limits as an attachment to the permit. This attachment is also being included in the Department's final Title V permit. In addition, the Title V permit includes a variety of other conditions designed to ensure legally and practically enforceable compliance with synthetic minor limits adopted for PM, PM_{10}, and $PM_{2.5}$. These include monitoring, calculations, recordkeeping, and reporting requirements found in Condition C.6, as well as requirements to control emissions with an electrostatic precipitator and operate a COM. Also, the emission factors and algorithm must be updated if source

test results for PM, PM_{10}, $PM_{2.5}$ exceed the currently used emission factor. The facility's long-term synthetic minor limits and supporting conditions for ensuring compliance are consistent with the EPA's past decisions and meet the three criteria for legal and practical enforceability in EPA's 1995 Options Guidance[34] and EPA's own synthetic minor permitting regulations[35]: (1) A technically-accurate limitation and the portions of the source subject to the limitation; (2) the time period for the limitation (hourly, daily, monthly, and annual limits such as rolling annual limits); and (3) the method to determine compliance including appropriate monitoring, recordkeeping, and reporting. The submitted calculations are also available to the public through the Freedom of Information process and available for review. Emission calculations for all sources including emission factors and equipment capacities were also made available in the facility's Title V permit application, which is available for public review and was included in the facility's public notice.

b. The commenter states: "The Draft Permit Lacks Adequate Monitoring to Assure Compliance with the Applicable Opacity Limits under the South Carolina State Implementation Plan." In particular, the commenter argues that the draft permit lacks sufficient monitoring to ensure compliance with S.C. Regulation 61-62.5, Standard No. 4, Section IX, and Standard No. 1, Section I.

<u>Department's response</u>

The likelihood that a source will exceed the Standard 4 opacity limit factors into the level of monitoring required. There are no expected visual emissions from any of the facility's sources, so a weekly schedule was developed in the original construction permit for observation during source operation. The commenter encourages the use of a certified observer to perform a Method 9 opacity reading in the event visible emissions are observed. However, a full Method 9 inspection is not needed when there are no visible emissions. In addition, although the inspection need not be performed by a certified observer, the permit does require the observer to "be trained and knowledgeable about the effects on visibility of emissions caused by background contrast, ambient lighting, and observer position relative to lighting, wind, and the presence of uncombined water." Should any abnormal emissions (*i.e.*, any visual emissions) be observed, corrective action must be taken and documented:

> Condition C.10: *Monitoring: The owner/operator shall perform a visual inspection on a weekly basis during source operation. Logs shall be kept to record all visual inspections, noting color, duration, density (heavy or light),*

[34] EPA memorandum dated 1/25/95 – Subject: Options for Limiting the Potential to Emit (PTE) of a Stationary Source Under Section 112 and Title V of the Clean Air Act (Act), pp 5-6; *see also* 67 Fed. Reg. 80186, 80191 (Dec. 31, 2002) (reiterating these criteria).
[35] 40 C.F.R. § 49.152(d) (defining "enforceable as a practical matter" for EPA-issued synthetic minor permits to sources constructing in Indian Country).

> *cause, and corrective action taken for any abnormal emissions. If a source did not operate during the required visual inspection time frame, the log shall indicate such. The owner/operator shall submit semiannual reports. The report shall include records of abnormal emissions, if any, and corrective actions taken. If the unit did not operate during the semiannual period, the report shall state so.*

(Emphasis added). As seen above, inspection logs must be kept, and reporting is required. These monitoring requirements were previously established and became final in the underlying construction permits for the facility, and they yield sufficiently reliable data to document opacity compliance given the nature of the source and its activities.

Emission controls and facility operations support the expected absence of visible emissions or opacity exceedances at this facility. The ash silo (Equipment ID AS) and sorbent silo (Equipment ID DSS) are each equipped with bin vent filters with a 99% efficiency. The particulate emissions from each of these sources is less than 1 lb/hr. Under normal operating conditions there should be no expected emissions. If a bin vent were to deteriorate, there could be a possibility of visible emissions during loading of a silo. The weekly inspections requirement will facilitate corrective action before a 20% opacity will be exceeded. The cooling tower (Equipment ID CT) also has an emission rate less than 1 lb/hr. The emissions from the cooling tower are based on dissolved solids in the water. The operation of the cooling tower is continuous and the Department cannot imagine any scenario where there would be enough dissolved solids in the cooling water that could cause visible emissions exceeding a 20% opacity. Weekly visual inspections are therefore adequate to ensure these sources do not exceed a 20% opacity. All other activities identified by the commenter such as fuel handling, fuel piles, and ash handling are not expected to be sources of visible emissions based on humidity content or their being closed systems. Moreover, potential emissions from ash handling are covered under the fugitive dust plan and will be controlled by water spraying.

The commenter also claims that monitoring of the ESP should be added to ensure compliance with the Standard 1 opacity limit. For woodwaste boilers, Standard 1, Section IV(A)(2), specifies what monitoring is required for ensuring compliance with Standard 1:

> *The owner or operator of any woodwaste boiler, not equipped with a wet scrubber, will be required to install, calibrate, operate, and maintain continuous monitoring system(s) approved by the Department for the measurement of opacity....*

Consistent with this regulatory requirement, Condition C.7 of the Title V permit requires operation and maintenance of a continuous opacity monitor, as well as associated recordkeeping and reporting.

As discussed in the regulatory section of the Title V's statement of basis, the ESP is not required for compliance with the 0.6 lb/MMBtu PM limit since the uncontrolled emission factor is 0.35 lb/MMBtu[36]. Monitoring of the ESP's secondary power input has been added to the Title V permit for compliance with the less than 250.0 ton per year synthetic minor avoidance limit for particulates. This monitoring in Condition C.19 includes the establishment of operating parameter ranges for secondary power input to ensure proper operation of the ESP. Proposed ranges were received by the Department on August 27, 2018 and approved on September 5, 2018.

c. The commenter states: "The Draft Permit Fails to Require the Facility to Take Adequate Measures to Control Fugitive Dust." Specifically, the commenter argues that the fugitive dust control plan identified in the draft permit is inadequate and does not ensure control of fugitive dust from fuel delivery, fuel loading and unloading, fuel storage, and ash transport and storage.

   Department's response

   The facility was required to submit a fugitive dust plan in conjunction with the issuance of the original construction permit. The fugitive dust plan was approved by the Department, and all existing facility operations are subject to the requirements of the fugitive dust plan. The fugitive dust plan condition, Condition C.15, simply incorporates the requirements of the existing fugitive dust plan adopted under the construction permit. Additional detail or requirements to the plan the commenter suggests[37] such as adding expansive foam to seal conveyors or fully enclosing fuel storage buildings is not necessary unless there is a specific problem with fugitive emissions at those specific sources that these measures would solve. Moreover, it is unlikely fugitive dust from these activities would leave the property line. Condition C.15 has been revised to require the facility to update its plan as needed and resubmit the plan for approval if the facility or the Department determines additional dust control measures are needed or current dust control measures need modification.

d. The commenter states: "The Draft Permit Does Not Assure that the Facility Safely Handles Wood Dust in Compliance with the Requirements to Design and Maintain a Safe Facility Under the Clean Air Act Section 112(r)(1) General Duty Clause."

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[36] AP-42 5th Ed, Tables 1.6.1/2003 Update (Filterable Particulate Matter for Boilers with Mechanical Collectors)

[37] Comments submitted by the Environmental Integrity Project, (Nov 2017) p. 10.

Department's response

The EPA indicated in the 1997 Shintech decision[38] and in prior rulemaking promulgations that compliance with 40 CFR § 68.215, as applicable, will satisfy the legal obligations of section 112(r) for purposes of part 70, and that Title V permits need not specifically address the General Duty Clause. Therefore, no modification of the permit is necessary with respect to the General Duty Clause. The Department does note that EPA also states that "Section 112(r)(1) remains a self-implementing requirement of the Act, and EPA expects and requires all covered sources to comply with the general duty provisions of 112(r)(1)."[39] Therefore, it would be improper to grant a permit shield identifying section 112(r)(1) as inapplicable. The draft Allendale Title V permit contains no permit shield for any requirements. Based on the past EPA response to the Shintech petition, the Department disagrees that section 112(r)(1) is an "applicable requirement" for purposes of Title V and proposes no changes in the proposed permit.

IV. Comment: South Carolina DHEC Must Ensure that Emissions Calculations for All Pollutants Include All Emission Sources at the Facility.

Department's response

The facility's Title V permit application includes emission calculations for all sources including emission factors and equipment capacities. The Title V application is available for public review and was included in the facility's public notice. The facility is also required to submit semiannual emission reports with the calculations used. A list of algorithms, emission factors, and operating parameters the facility uses to determine monthly emissions for pollutants with synthetic minor limits has been added to the permit. The algorithms, emission factors, and operating parameters are contained in an attachment called "Algorithms" at the end of the permit. The facility is required to provide written notice to the Department when there is a change to any of the emission factors so they can be reviewed and updated. The appropriate Title V modification request will also be required before the permit can be updated.

See also the Department's response to comment at III.a above. As with PM, the approach to determining compliance with all other synthetic minor limits was determined during construction permitting and satisfies requirements for legal and practical enforceability. This issue is not subject to further Department or judicial review.

V. Concluding comments by commenter: The commenter "urge[s] South Carolina DHEC to revise the Title V permit to address our concerns. South Carolina DHEC must provide a clear explanation in the statement of basis for the Title V permit that explains how the proposed

[38] *In the Matter of Shintech Inc. And Its Affiliates Polyvinyl Chloride Production Facility*, Order on Permit Nos. 2466-VO, 2467-VO, and 2468-VO, 1997 EPA CAA Title V LEXIS 8, at *24 (E.P.A. Sept. 10, 1997).
[39] *Id*.

permit that it sends to the U.S. EPA assures the facility's compliance with applicable requirements." The commenter adds that "[i]f South Carolina DHEC has already forwarded a proposed Title V permit for Allendale Biomass to U.S. EPA for its 45-day review period, South Carolina DHEC needs to withdraw that proposed permit from U.S. EPA review and follow sequential review procedures, i.e., South Carolina DHEC must consider these comments and any others received during the public comment period prior to submitting a proposed permit to U.S. EPA. We request that South Carolina DHEC notify us when it finalizes its response to our comments and when any additional opportunity to participate in the permitting process arises."

Department's response

The Department has revised the draft permit where appropriate to address the commenter's concerns as summarized on page one of this document. The statement of basis has been revised to reflect specific changes to the draft permit.

Following the initial notice and comment period, the Department released a revised draft permit and held an additional 30-day public comment period. The proposed permit will be sent to the EPA for the 45-day review period before the Department decision regarding this permit is made.