STARTUP, SHUTDOWN, AND MALFUNCTION PLAN

DRAX BIOMASS, INC.
AMITE BIOENERGY LLC
WOOD PELLET MANUFACTURING FACILITY
1763 GEORGIA PACIFIC ROAD NO. 2
GLOSTER, MISSISSIPPI
AMITE COUNTY

PPM PROJECT NO. 30065125

SEPTEMBER 2024

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FOR

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1763 GEORGIA PACIFIC ROAD NO. 2
GLOSTER, MISSISSIPPI

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DISTRIBUTION LIST

STARTUP, SHUTDOWN, AND MALFUNCTION PLAN

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1.0 INTRODUCTION

1.1 Facility Description

Amite BioEnergy LLC (ABE) is located at 1763 Georgia Pacific Road No. 2 in City of Gloster, Amite County, Mississippi. A map showing the geographic location of the facility at latitude 31.1833333° North and longitude 91.0333333° West is included as **Figure 1, Site Location Map,** in **Appendix A, Figures**.

ABE produces wood pellets from whole logs, wood chips, and clean mill and forest residuals. The raw material is delivered to the site by trucks, and the produced pellets are shipped offsite by trucks. The facility comprises several process areas, such as: wood receiving and storage; wood debarking, chipping, and storage; biomass fuel sizing and storage; chip drying; hammermills; pellet mills; pellet storage; and pellet load out. Facility operations are further shown in **Figure 2, Site Map,** in **Appendix A**. The facility consists of the following main process areas:

- Raw Material Storage Area;
- Drying Process Area;
- Pelletizing Process Area; and,
- Finished Material Storage Area.

1.1.1 Drying Unit Area

ABE owns and operates a single-pass, green rotary dryer used to dry softwood chips from approximately 50% moisture content (M.C.) to approximately 11%. A 165.0 million British Thermal Units per hour (MMBTU/hr) biomass furnace that burns bark and other clean biomass is used to supply useful thermal energy to the green wood chip rotary dryer. The dried wood chips are routed to three high-efficiency cyclones to remove the fine material before storing in a storage silo prior to processing into wood pellets.

The emissions from the Biomass Furnace, Chip Dryer, and high-efficiency cyclones are routed to a Wet Electrostatic Precipitator (WESP) and then to a Regenerative Thermal Oxidizer (RTO) before discharge to the atmosphere. The WESP and RTO control particulates, acid gases, and volatile organic compound (VOC) emissions.

1.1.2 Pelletizing Process Area

The dried wood chips are further processed into wood pellets to be used as source of green, renewable energy that can easily be stored and shipped. The process involves the grinding and resizing of the dried chips so that the finely ground material can be pressed through dies at high temperatures and pressure to form cylindrical-shaped pellets. Equipment associated with the pelletizing process includes hammermills, pelletizers, coolers, and storage silos.

The emissions from the hammermills, pellet mills and coolers are routed to baghouses and then to a Regenerative Catalytic Oxidizer (RCO) before discharging into the atmosphere.

2.0 REGULATORY REQUIREMENTS

In order to address the control of emissions during transient periods, the development of a Startup, Shutdown, and Malfunction Plan (SSMP) is required. In addition, this plan will define the following:

- Procedures for operating the furnace, dryer, and control devices during periods of deviation (upset conditions and malfunctions); and,
- Define periods that would require the use of the furnace and dryer abort stacks at the facility.

The objective of this Plan is to establish a program that will ensure compliance with relevant sections of 40 CFR 63.6(e), as well as satisfy the requirement for a SSMP per 40 CFR 63.6(e)(3)(i).

2.1 Purpose and Scope

Federal regulations [Code of Federal Regulations, Title 40, Part 63.6(e)(3)(i) (40 CFR 63.6(e)(3)(i))] require the preparation and implementation of a written Startup, Shutdown, and Malfunction Plan (SSMP) for any owner or operator of an affected source for which any relevant standard has been established pursuant to section 112 of the Clean Air Act.

40 CFR 63.6(e)(3)(i) states t*he owner or operator of an affected source must develop a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction; and a program of corrective action for malfunctioning process, air pollution control, and monitoring equipment used to comply with the relevant standard. The startup, shutdown, and malfunction plan does not need to address any scenario that would not cause the source to exceed an applicable emission limitation in the relevant standard. This plan must be developed by the owner or operator by the source's compliance date for that relevant standard.*

Startup, shutdown, and malfunction (SSM) are defined in § 63.2 as follows:

- Startup – the setting in operation of an affected source or portion of an affected source for any purpose.
- Shutdown – the cessation of operation of an affected source or portion of an affected source for any purpose.
- Malfunction – any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in

a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

The purpose of this SSMP is to:

- Prescribe procedures for operating the furnace, dryer, hammermills, and pellet coolers during periods of SSM at the WESP, RTO, or RCO given a scenario that would cause these sources to exceed and applicable emission limitation or monitoring requirement;
- Ensure that, at all times, the owner or operator operates and maintains each affected source, including associated air pollution control and monitoring equipment, in a manner which satisfies the general duty to minimize emissions established by paragraph (e)(1)(i) of 40 CFR Section 63.6;
- Ensure that owners or operators are prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of hazardous air pollutants;
- Reduce the reporting burden associated with periods of SSM (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation); and
- Satisfy the requirements of 40 CFR 63.6(e)(3)(i).

Complete copies of this SSMP are maintained at the facility and are made available to authorized representatives of the Environmental Protection Agency (EPA) and Mississippi Department of Environmental Quality (MDEQ) for inspection or submitted when requested per 40 CFR 63.6(e)(3)(vi).

2.2 Recordkeeping and Reporting Procedures

In accordance with 40 CFR 63.6(e)(3), ABE must maintain records of each period of SSM in which there is a reasonable expectation that an emission standard cannot be met. SSM reports discussed in this plan ensure that ABE is satisfying the general duty to minimize emissions and document that actions taken during those periods are consistent with this plan. The recordkeeping and reporting requirements presented in this section apply only to all SSM scenarios that result in an exceedance of an operating limit or emission standard. All records and reports described in this section will be retained for at least five years.

In addition to SSM recordkeeping and reporting, ABE will monitor and track deviations from continuous monitoring system and emission control device failures at the WESP, RTO, and

RCO, and operational failures at the furnace/dryer and pelletizing process area in accordance with the air permit.

2.2.1 Records

Records for the SSM period, as defined above, will include the following:

- Start date and start time of each startup/shutdown;
- End date and end time of each startup/shutdown;
- The duration of each startup/shutdown;
- Corrective action taken;
- Documentation to demonstrate that actions taken during periods of SSM are consistent with this SSMP;
- Description of any actions taken during periods of SSM that are not consistent with procedures in this SSMP; and,
- Results of evaluations of excessive exceedances occurring during malfunctions.

To properly identify, undertake corrective actions, and maintain defensible records for deviations, ABE will utilize process knowledge along with the terms, conditions, and definitions found in applicable parts of the permit and regulations.

2.2.2 Reports

Revisions to this SSMP may be made without prior agency approval to reflect changes in equipment and procedures and to meet the regulatory requirements. Any such revisions made during a semiannual reporting period will be submitted with the periodic semiannual monitoring report (SMR). Revisions to this plan—which alter the scope of activities during a startup, shutdown, or malfunction—will not take effect until a written notice, describing the revisions, is submitted to the permitting authority. Changes made to this plan that may significantly increase emissions are subject to approval by the Administrator through an appropriate permitting action. A written request for approval of the changes and the revised SSMP will be submitted to the Administrator within 5 days after making such a change to this plan. Should an SSM event occur that is not addressed or inadequately addressed in this SSMP, ABE will make the appropriate revisions to this plan within 45 days after the event.

Each SSM occurrence defined in this plan during a semiannual reporting period will be reported in the semiannual monitoring report. The report will include the following:

- Start date and start time;
- End date and end time;
- The duration;
- Description of the SSM;
- Cause of the SSM; and,
- Corrective action taken;

3.0 OPERATIONS, MONITORING, AND MAINTENANCE

Per 11 Miss. Admin. Code Pt. 2, Ch. 2 R. 2.2.B(10), the ABE facility is required to maintain all operations, monitoring, and maintenance for each Continuous Monitoring System (CMS) on record in a manner readily available upon request.

The facility utilizes the following CMS for compliance with the permit and Mississippi regulations:

- Thermocouples for temperature operating limits at the RTO and RCO; and
- Amperage meter for current measurements and voltage meter for voltage measurements at the WESP to determine the power operating limit.

ABE will provide proper preventative and corrective maintenance in accordance with the facility's SSMP per 40 CFR 63. Facility personnel will also keep detailed records of maintenance activities, including but not limited to; preventative maintenance, inspections, and corrective maintenance.

The ABE facility will maintain records of the maintenance and operation procedures for each CMS such that the records are readily available and kept for at least five years after the date of the record. The ABE facility will submit any required data to the Administrator during its compliance reporting, as applicable, or upon request.

3.1 Wet Electrostatic Precipitator (WESP)

WESP performance increases as power input increases, which indicates the work done by the WESP to remove PM. Secondary voltage and current are a partial indicator of power consumption. Secondary voltage drops when a malfunction occurs in the WESP. In addition, the secondary voltage will increase if the collection plates are not cleaned, causing the current to drop. Since the power is the product of the voltage (V) and the current (I), monitoring the power input will provide a reasonable assurance that the WESP is functioning properly.

ABE recommends only monitoring voltage and current of each field to calculate the power of each field to determine the power of each three (3) fields. An excursion is defined as the power (product of each fields voltage and current) readings being below the value established during the initial compliance test that are averaged over a 3-hour period. Power will be optimized during facility compliance testing. A power that is below the applicable minimum threshold value during normal operating conditions will trigger an audible and/or visible alarm in the control room.

If the power cannot be raised to satisfy the applicable minimum threshold within 60 minutes from the start of the excursion, the furnace will be idled and dryer feed will be shut down. The cause of the excursion must be corrected and documented prior to re-starting the furnace/dryer.

3.2 Regenerative Thermal Oxidizer (RTO)

Thermal oxidizers are combustion systems that control VOC, carbon monoxide (CO), and volatile hazardous air pollutants (HAP) emissions. The rate at which VOC compounds, volatile HAP, and CO are oxidized is greatly affected by temperature; the higher the temperature, the faster the oxidation reaction proceeds. Thermal destruction of most organics occurs at combustion temperatures between 800°F and 2,000°F.

ABE monitors the outlet combustion temperature of each chamber. An excursion is defined as the minimum temperature readings being below the value established during the initial compliance test that averaged over a 3-hour period. The temperature will be optimized to minimize natural gas usage in the RTO while maintaining the desired destruction efficiency. A combustion chamber outlet that is below the applicable minimum threshold temperature during normal operating conditions value will trigger an audible and/or visible alarm in the control room.

If the temperature cannot be raised to satisfy the applicable minimum threshold within 60 minutes from the start of the excursion, the furnace will be idled and dryer feed will be shut down. The cause of the excursion must be corrected and documented prior to re-starting the furnace/dryer.

3.3 Regenerative Catalytic Oxidizer (RCO)

Catalytic oxidizers are oxidation systems (similar to thermal oxidizers) that control VOC and volatile HAP emissions. Catalytic oxidizers use a catalyst to promote the oxidation of VOCs. The rate at which VOC compounds and volatile HAP are oxidized is greatly affected by temperature; the higher the temperature, the faster the oxidation reaction proceeds. The operating temperature needed to achieve a particular VOC control efficiency depends on the species of pollutants, concentration, and the catalyst type. Depending the pollutant and the type of catalyst, RCOs generally operate between 650°F and 1,000°F. The catalyst typically lasts 2 to 5 years. Thermal aging over the lifetime of the catalyst and the presence of PM and catalyst poisons in the inlet gas streams reduce the catalyst's ability to promote the oxidation reaction by masking and coating the catalyst, thereby preventing contact between VOC and the catalyst surface

Therefore, in accordance with the manufacturer's recommendations, ABE will monitor the effective life of the catalytic media in the RCO in accordance with PTC 0080-00031 no later than sixteen (16) months after the initial start-up. Thereafter, ABE will perform subsequent apparent density testing on the catalytic media in each RCO chamber no later than 16 months after the previously completed test.

ABE monitors outlet combustion temperature of each chamber. An excursion is defined as the minimum temperature readings being below the value established during the initial compliance test that averaged over a 3-hour period. The temperature will be optimized to minimize natural gas usage in the RCO while maintaining the desired destruction efficiency. A combustion chamber outlet that is below the applicable minimum threshold temperature during normal operating conditions value will trigger an audible and/or visible alarm in the control room.

If the temperature cannot be raised to satisfy the applicable minimum threshold within 60 minutes from the start of the excursion, the hammermills and pellet coolers will be shut down. Because the RCO has two (2) parallel sides with each having a fan design capacity of max. 130,000 standard cubic feet per minute (scfm) air flow (total of max. 260,000 scfm), then after the start of an excursion the blower flow rate shall be reduced to equal or less than 130,000 scfm in an effort to correct the problem. The cause of the excursion must be corrected and documented prior to re-starting the hammermills and pellet coolers.

4.0 STARTUP AND SHUTDOWN

The purpose of this section is to prescribe procedures for the startup and shutdown of the Drying Unit. This section also clarifies which actions are within the scope of the regulatory definition of startup and shutdown.

All startups are preceded by a shutdown. Depending on the purpose of the preceding shutdown, portions of the air pollution control system may be in service upon commencing a startup. This will be reflected on the startup record, as provided in **Appendix B, Startup/Shutdown Recordkeeping Form**. During a startup, chips will not be fed into the dryer until all operating parameters are within limits at the WESP (Power) and RTO (Temperature). A startup event is concluded once all operating parameters are within limits. A shutdown is initiated by reducing throughput and the emptying of the wet side system.

ABE's startup and shutdown procedures are representative of safety and good air pollution control practices. The procedures are designed to minimize the potential for excess emissions during startup and shutdown of the equipment. Adherence to these startup and shutdown procedures will employ the knowledge and skills demonstrated through the implementation of the Operator Training and Certification Program.

4.1 Furnace

During cold startup the furnace needs to be heated for 8-16 hours total. Furnace emissions are vented to the abort stack until the furnace temperature reaches useful thermal energy and chips are fed to the dryer.

The heat capacity per stroke was calculated by using the following formula:

$$\frac{MMBTU}{hr} = Strokes \times \frac{Fuel}{Stroke} \times H_{biomass} \times (1 - M.C.) \times CF$$

Where,

- $\frac{Fuel}{Stroke}$ = pounds of fuel per stroke = 450.0$\frac{lbs}{stroke}$
- $H_{biomass}$ = Heat content of wood and bark = 9,000 $\frac{BTU}{lb}$
- M.C. = moisture content = 50%
- CF = conversion factor from BTU to MMBTU = $\frac{MMBTU}{1000000\ BTU}$

The following table provides the heat capacity of the furnace during startup:

Number of Strokes	Biomass pounds	Heat Capacity	% of Capacity
1	450	2.03	1.2%
2	900	4.05	2.5%
3	1,350	6.08	3.7%
4	1,800	8.10	4.9%
5	2,250	10.13	6.1%
6	2,700	12.15	7.4%
7	3,150	14.18	8.6%
8.2	3,668	16.50	10.0%
9	4,050	18.23	11.0%
10	4,500	20.25	12.3%
16.3	7,333	33.00	20.0%

From the above description, furnace startup/shutdown mode is defined as equal to and less than 33.00 MMBTU/hr (20% of the maximum furnace capacity of 165 MMBTU/hr). The facility will shut down the equipment during normal maintenance schedules and periods for repair. Idle mode is defined as the operation of the furnace at a heat input rate equal to or less than 16.5 MMBTU/hr (10% of the maximum furnace capacity of 165 MMBTU/hr). During the initial hour of transition to idle mode, operations could potentially exceed the 16.5 MMBTU/hr. This requirement is due to the need to form a "plug" of fuel that will effectively seal off the fuel hopper from the combustion chamber, thus preventing burn backs into the fuel hopper. This operating procedure during the transition into idle mode provides a level of safety for facility equipment and personnel by reducing the risk of fire and/or explosion.

The dryer system must be shutdown prior to shutting down the furnace. Conditions that may result in a furnace shutdown include the following:

- Running out of fuel;
- Positive combustion pressure;
- Overtemperature;
- Faults on the fans (under-fire, over-fire, recirculation, or cooling);
- Fault on the camera system;
- Fault on fuel feeder and grate system;
- Fault on bark reclaimer; and,
- By-Pass flap will not open or close.

4.2 Chip Dryer

Within 8-16 hours of furnace startup, the dryer will be started. Do not introduce chips to the dryer until desired operational parameters have been met.

- Startup infeed of chips once the dryer reaches greater than 200°F. The infeed rate for startup is approximately 40 – 45 %.
- Emissions control devices are online.
- Useful thermal energy has been met at the furnace.
- Test optimal moisture content of the chips.

During normal dryer shutdown procedures, emissions will not be aborted out of the abort stack and will be routed to the emission control devices. Only during unplanned shutdowns will emissions be routed out of the abort stack.

Conditions that may result in a planned dryer shutdown include the following:

- Furnace fuel hopper is empty and runs out of fuel;
- Furnace system exceeds temperature;
- Furnace System reaches a positive pressure;
- Inlet or Outlet temperatures get too hot;
- Cyclone airlocks get a rotation monitor;
- Cyclone outfeed conveyor has a rotation monitor or plug;
- Production/Fire Dump diverter gate is not working properly; and,
- Deluge system is running or faulted.

4.3 Stack Bypass

4.3.1 Furnace and Dryer Abort Stacks

There are two (2) distinct abort stacks: the furnace abort stack and the dryer abort stack. The dryer abort stack is located prior to the WESP. The dryer abort stack may be used to vent emissions when a malfunction occurs at the WESP/RTO.

Dryer and/or furnace bypass for shutdowns and startups may be vented for no more than 100 total hours based on a rolling 12-month average. Once 100 hours are attained, emission shall either be directed to the WESP-RTO (if fully operational) or cease all operations (including periods of shutdown) from the furnace. Furnace startup or shutdown mode is defined as equal

to and less than 33.00 MMBTU/hr and greater than 16.5 MMBTU/hr. During planned startups or shutdowns the dryer green chips feed to the dryer will be terminated. Once the bypass is closed the green chips to the dryer will be started. .

If there is a malfunction at the WESP, RTO, or dryer, the furnace abort stack is used to vent the furnace emissions. Routine furnace abort stack usage occurs at reduced firing rates. During periods of furnace idle mode, emissions may be vented from the furnace to the by-pass stack for no more than 500 hours based on a rolling 12-month total. Once 500 hours are attained, either direct furnace emissions to the Dryer (if fully operational) or cease all operations (including periods of idle mode) from the furnace. Idle mode is defined as the operation of the furnace at a heat input rated equal to or less than 16.5 MMBTU/hr. During the initial hour of transition to idle mode, operations could potentially exceed the 16.5 MMBTU/hr. This requirement is due to the need to form a "plug" of fuel that will effectively seal off the fuel hopper from the combustion chamber, thus not allowing burn backs into the fuel hopper. This operating procedure during transition into idle mode is required due to the protection of human health and facility equipment.

Use of the Furnace Bypass Stack or the Rotary Dryer Bypass Stack for any purpose other than start-up, shutdown, or idle mode constitutes a deviation of the air permit and is subject to the deviation reporting requirements specified in the air permit.

The following are current facility by-pass conditions:

Closed:

- Proper operational conditions.
- During furnace and dryer unit startup.

Opened:

- Furnace startup and shutdown to allow time for operational temperature to be reached;
- Planned downtime for maintenance activities (no green chips will be fed to the dryer during planned downtime while the bypass is open);
- CMS Downtime such as thermocouple, amperage meter, voltage meter, etc;
- Malfunctions; and,
    - Process equipment malfunctions; and,
    - Control (WESP, RTO, RCO, etc.) malfunction.
- Upset Conditions;

- Process equipment issues that causes the furnace and/or dryer to shut down for safety reasons.
- Control (WESP, RTO, RCO, etc.) shutdown for safety reasons.
- Other upset conditions (power outage, control device fuel outage, acts of God, etc.)

During operations when the bypass stack is open, the RTO will be placed in idle mode to maintain the operating limit discussed in **Section 5.2**. Once the bypass closes and the process air is rerouted from the dryer to the RTO, the operating temperature of the RTO may drop slightly. This drop in temperature will trigger an increase in natural gas input to raise the RTO's temperature back to the required operating temperature. This process can take up to 30-40 minutes, depending on the influx of air from the drying unit and the temperature of the air in the conduits at the time the bypass is closed.

4.3.2 Pellet Hammermills and Cooler Abort Stacks

There are three (3) distinct abort stacks at the pelletizing process area: the primary hammermill abort stack, secondary hammermill abort stack, and the pellet cooler abort stack. These abort stacks are located prior to the RCO and posterior to the baghouses. These abort stacks may be used to vent emissions for safe equipment ramp down to prevent risk exposure of potential smoldering and fires in the process equipment.

The pelletizing process area currently has six baghouse fans for the primary hammermills, three baghouse fans for the secondary hammermills, and six baghouse fans for the pellet coolers. The pelletizing process operates sufficiently as long as two baghouse fans are operational for each of the primary hammermills, secondary hammermills, and pellet coolers. If less than two baghouse fans on either of the hammermills or pellet coolers are detected, then the system aborts out of the corresponding abort stack to protect equipment and human health.

4.3.2.1 RCO Startup Checklist

The following checklist must be followed before startup:

1. Ensure that NO PERSONS are inside the RCO system or its components or working near any RCO moving components and that all access doors are bolted tightly in place.
2. Ensure all hand valves on the fuel train and the piping leading to the burner are open.
3. Ensure that all hand valves on the pneumatic lines are open.
4. Ensure all hand valves on the pneumatic control lines are open.

5. Ensure that all lock-out devices have been removed and that all electrical supply circuit breakers are in the closed position.

4.3.2.2 RCO Startup Procedure

1. From the system stop option screen, press the system stop function key. This key will reset the system to a ready state and reset any previous commands.
2. Press the system start function key after pressing the system stop function key. This action will then start the system fan and the combustion blower.
3. Once the compressed air, poppet valves, combustion blowers, and primary airflow limits are established, the burner undergoes the purge sequence (3-4 minutes).
4. Once this is done, a manual burner start is required to initiate the burner ignition sequence.
5. Burner main flame operation is proven for all eight burners. The PLC starts modulating the fuel flow to reach the set control temperature, which is 855 F.
6. RCO will continue to warm up. Depending on whether it's a cold start-up, warm-up might take up to two hours.
7. Once the soak cycle is complete, the RCO is ready to accept process exhaust gases. The status message "RCO READY" will indicate this condition.
8. Once you have the minimum required flow from the Pellet cooler/Primary Hammermill and Secondary Hammermill, the isolation dampers open, the fresh air damper closes, and the duct abort dampers close.

According to the OEM for each duct, the minimum required flow for RCO occurs when one of these duct isolation dampers is open; this allows the fresh air damper on the RCO to close and the isolation damper to open. These are the instances when duct isolation dampers open.

1. The Primary Hammer Mill (PHM) duct needs at least three bag house fans running for the duct abort damper to close and the isolation damper to open.
2. Secondary Hammer Mill (SHM) duct needs at least two bag house fans running for the duct abort damper to close and isolation damper to open.
3. The pellet cooler (PC) duct needs at least three bag house fans running for the duct abort damper to close and the isolation damper to open.

4.3.2.3 Cold Startup

Consider the following assumptions for a cold startup:

- All silos are emptied for a cold shutdown.
- RCO is ready for the process
- The Dryer is ready for production.
- Zone 2 is running (Distribution screws under Dry Chip silo, and Conveyor LE-1.27, LE-1.28, & LE-1.29)

4.3.2.3.1 Start Primary Baghouses

- Start the PHM (1AB, 2AB, 3AB sequence start); however, pause the mills until we have at least three baghouses running on the primary duct line.
- This will open the duct process isolation and close the abort damper. Since the RCO is ready for the process, it closes the fresh air and isolation damper.
- Start feeding the hammer mills once you have at least three baghouses running.

4.3.2.3.2 Start Secondary Baghouses

- Start your zone 7, 8, and 9 in AUTO and pause your quad screws. This will have the bag houses and the mills running. Once two baghouses run on the SHM duct, the duct process isolation will be opened, and the abort damper will be closed.
- Start the feed to the hammer mills only when the duct process isolation is open, and the abort damper is closed.

4.3.2.3.3 Start Pellet Mills

- Click “Start” for the Pelletizer Zone (710, 711, or 712)
- Once a Zone is started, the status indicator will change from “STOPPED” to “AUTO” to indicate that the Zone components are ready to run in Automatic Mode.
- Manually ramp up fiber flow to the Pellet Mill until pellet quality is acceptable.
- Use manual control (“MAN”) to enter a ramp-up target speed (up/down arrows) until pellet quality is good. Open the divert gate to pellet coolers. This will send the process air to the baghouse.
- The pellet cooler line needs at least three baghouses running to process, or it will go to abort.

4.3.2.4 Upset conditions

- Process equipment issues that cause the bag house fans to shut down below the minimum requirement for safety reasons
- Control shutdown for safety reasons to empty your process equipment.

- Other upset conditions (power outage, control device outage, acts of God, etc.)

The following table shows the minimum number of baghouses that need to provide adequate air flow to the RCO.

Bag houses	Number of Fans
Secondary Hammer Mill	2
Primary Hammer Mill	3
Pellet Cooler	3

When any of these lines go to abort, pause the feed to all the mills.

If only two PHM fans are running, then stop feeding the two mills. Suppose the issue cannot be fixed immediately. Watch the level on the dry chip silo and start shutting the feed to the Dryer.

If only one SHM fan is running, stop the feed to the mill. If we can bring the other two SHMs fan up after emptying the ripening bins, we should shut all the mills down, too. We cannot run at any time with the duct abort to the atmosphere.

If running two cooler baghouses, stop feeding the mills and purge the dies with a pellet mill divert to dump.

4.3.2.5 Shut Down

- During the shutdown, empty your zones and stop the mills. If actively feeding any of the mills, all the duct lines should be processed to RCO.
- Once all your mills run empty, turn off your bag house fans on all the mills. This will open the fresh air damper to close the process isolation gates.
- Initiate shut down on the HMI/Scada to cool the RCO down to ambient conditions.

5.0 MALFUNCTIONS

The purpose of this section of the Startup, Shutdown and Malfunction Plan is to:

- Define potential malfunctions and their causes;
- Describe measures to minimize the frequency and severity of malfunctions;
- Prescribe procedures for operating and maintaining the equipment during malfunctions; and
- Prescribe actions to correct the cause of a malfunction.

In accordance with Air Permit, the permittee shall report all deviations from permit requirements, including those attributable to upsets and malfunctions, the probable cause of such deviations, and any corrective actions or preventive measures taken.

A deviation is:

- A situation where emissions exceed an emission limitation or standard;
- A situation where process or emissions control device parameter values indicate that an emission limitation or standard has not been met;
- A situation in which observations or data collected demonstrates noncompliance with an emission limitation or standard or any work practice or operating condition required by the permit; and
- A situation in which an exceedance or an excursion occurs.

5.1 Compliance Assurance Monitoring (CAM)

Compliance assurance monitoring (CAM) is intended to provide a reasonable assurance of compliance with applicable requirements under the Clean Air Act (CAA) for large emission units that rely on pollution control device equipment to achieve compliance. Monitoring is conducted to determine that control measures, once installed or otherwise employed, are properly operated and maintained so that they continue to achieve a level of control that complies with applicable requirements.

ABE has developed a CAM Plan in accordance with the applicable regulations for proper operations of the control devices in a manner that to minimizes the potential for excess emissions, provided in **Appendix C, Compliance Assurance Monitoring Plan**.

5.2 Operating Limits

Operating limits were established for the WESP, RTO, and RCO during initial performance testing. During the initial performance test, a minimum combustion chamber temperature for the RTO and the RCO (in degrees Fahrenheit) was established to demonstrate continuous compliance with a 95% control efficiency. The following table summarizes the operating limits established during the November 2-4, 2023, compliance test:

Operating Limits						
Range	Average WESP Current mA DRE ≥ 95%	Average WESP Voltage kV DRE ≥ 95%	Average WESP Power kW DRE ≥ 95%	Total WESP Power kW DRE ≥ 95%	Average RTO Temperature °F DRE ≥ 95%	Average RCO Temperature °F DRE ≥ 95%
Minimum	437.84	43.05	20.38	81.66	1,609.66	846.40
Maxumum	799.86	66.11	52.39	157.17	1,653.54	853.28
Average	707.08	62.56	44.62	137.18	1,624.98	849.86

The minimum operating limits may be modified based on subsequent performance tests demonstrating compliance with the minimum VOC control efficiency.

5.3 Measures to Minimize Deviations

In accordance with §63.6(e)(1)(i), at all times, including periods of startup, shutdown, and malfunction, the owner or operator 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. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires that the owner or operator reduce emissions from the affected source to the greatest extent which is consistent with safety and good air pollution control practices. The general duty to minimize emissions during a period of startup, shutdown, or malfunction does not require the owner or operator to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan required in paragraph (e)(3) of this section), review of operation and maintenance records, and inspection of the source.

During all deviations, ABE must record the following:

- Date and time of each deviation;

- The duration of each deviation;
- Documentation to demonstrate actions taken during periods of deviation;
- Results of investigations and evaluations of the cause of deviations; and,
- Corrective action taken to resolve deviation.

5.4 Types of Deviations

The types of deviations are categorized into the following groups:

- Malfunctions; and,
- Upset Conditions.

A detailed list of Causes and Groups is provided in **Appendix D, Deviations and Causes**.

5.4.1 Startup and Shutdown

Furnace startup/shutdown mode is proposed as equal to and less than 33.0 MMBTU/hr (20% of maximum furnace capacity of 165 MMBTU/hr). Facility shutdown during normal maintenance schedules and periods for repair.

Startup and Shutdowns are considered a deviation however is not considered a violation. Startup and Shutdowns are further detailed above in **Section 4.0, Startup and Shutdown**.

5.4.2 Upset Conditions

In accordance with 11 Miss. Admin. Code, Pt. 2, R. 1.2.LL, an upset is an unexpected and unplanned condition of operation of the facility in which equipment operates outside of the normal and planned parameters. An upset shall not include a condition of operation caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, operator error, or an intentional startup or shutdown of equipment.

As stated by 11 Miss. Admin. Code, Pt. 2, R. 1.10, for an upset defined in Rule 1.2, the Commission may pursue an enforcement action for noncompliance with an emission standard or other requirement of an applicable rule, regulation, or permit. In determining whether to pursue enforcement action, and/or the appropriate enforcement action to take, the Commission may consider whether the source has demonstrated through properly signed contemporaneous operating logs or other relevant evidence the following:

- an upset occurred and the source can identify the cause(s) of the upset;
- the source was at the time being properly operated;

- during the upset the source took all reasonable steps to minimize levels of emissions that exceeded the emission standard or other requirement of an applicable rule, regulation, or permit;
- that within 5 working days of the time the upset began, the source submitted a written report to the Department describing the upset, the steps taken to mitigate excess emissions or any other noncompliance, and the corrective actions taken; and
- that as soon as practicable but no later than 24 hours of becoming aware of an upset that caused an immediate adverse impact to human health or the environment beyond the source boundary or caused a general nuisance to the public, the source provided notification to the Department.

In any enforcement proceeding by the Commission, the source seeking to establish the occurrence of an upset has the burden of proof. This provision is in addition to any upset provision contained in any applicable requirement. These upset provisions apply only to enforcement actions by the Commission and are not intended to prohibit EPA or third-party enforcement actions.

The operator must maintain operating logs that provide the following:

- Date and time of the upset;
- Cause of the upset;
- Statement that the equipment is being operated properly;
- Actions taken to minimize emission levels;
- Notify MDEQ in accordance with 11 Miss. Admin. Code, Pt. 2, R. 1.10(A)(d &e).

The following should be considered an upset condition:

- Process equipment issues that cause the furnace and/or dryer to shut down for safety reasons.
- Control (WESP, RTO, RCO, scrubber, etc.) shutdown for safety reasons.
- Other upset conditions (power outage, control device fuel outage, acts of god, etc.)

5.4.3 Malfunctions

As defined by 40 CFR 63.2, malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused, in part, by poor maintenance or

careless operation are not malfunctions. During periods of malfunction the operator shall operate within established parameters as much as possible, and monitoring of all applicable operating parameters shall continue until all waste has been combusted or until the malfunction ceases, whichever comes first.

In accordance with 40 CFR 63.6(e)(3)(i), if a malfunction occurs during the reporting period, the owner or operator must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by you during a malfunction of a furnace, dryer, or associated air pollution control device or CMS to minimize emissions.

See **Appendix E, Malfunction Recordkeeping Form** for a template to document all facility malfunctions.

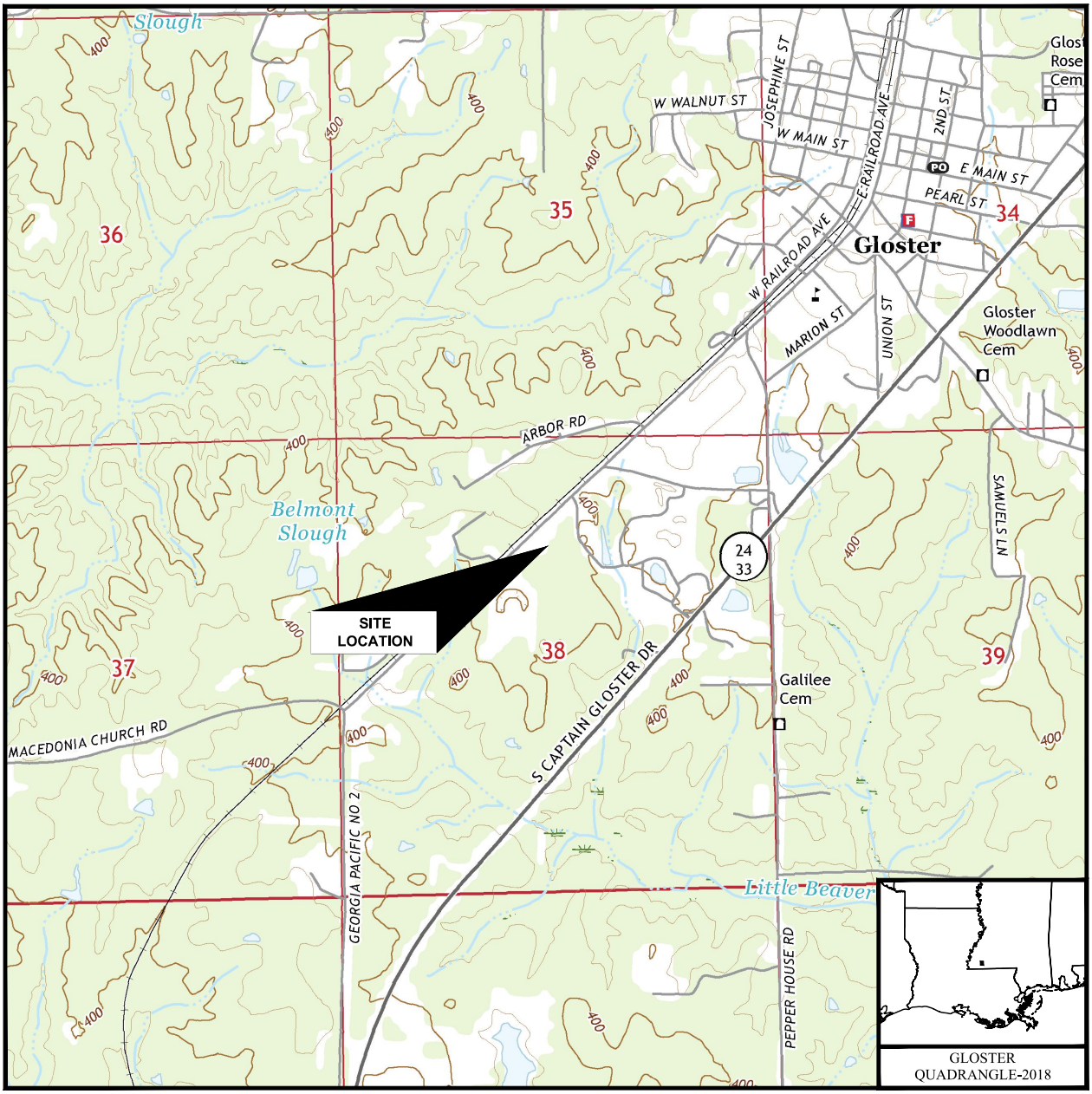
The following should be considered a malfunction and included as a deviation:

- Out-of-calibration gas or CMS issues. Monitors and probes must be replaced periodically. Many times, when a probe or monitor is malfunctioning the automated calibration system will try to re-calibrate the monitor many times in one day. This results in depletion of the calibration and span gas, and must wait on delivery of a new monitor, probe, and/or calibration gas. Consideration for calibration gas shelf-life must be considered. Also, equipment availability is also an issue to consider.
- Maintenance and repair that is necessary to repair equipment while the furnace, dryer, or control device is operating is considered a malfunction, such as the following:
    - Burner Fault/Failure/Malfunction/Repair;
    - Air Supply Component Fault/Failure/Malfunction/Repair;
    - Exhaust Fan Fault/Failure/Malfunction/Repair;
    - Valve Fault/Failure/Malfunction/Repair;
    - Ash System Mechanical Malfunction/Repair;
    - ID Fan Fault/Failure/Malfunction/Repair;
    - Damper Fault/Failure/Malfunction/Repair; and,
    - Other Component Fault/Failure/Malfunction/Repair.

If a malfunction of a monitoring system, furnace, dryer, or emission control device causes any applicable emission or operating limitation to be exceeded, this is considered a “Deviation”. However, a deviation is not always a violation. To properly identify, undertake corrective actions, and maintain defensible records for deviations, ABE personnel will utilize process knowledge along with the terms, conditions, and definitions found in applicable parts of the permit and regulations to manage deviations or become an exception to a deviation.

APPENDICES

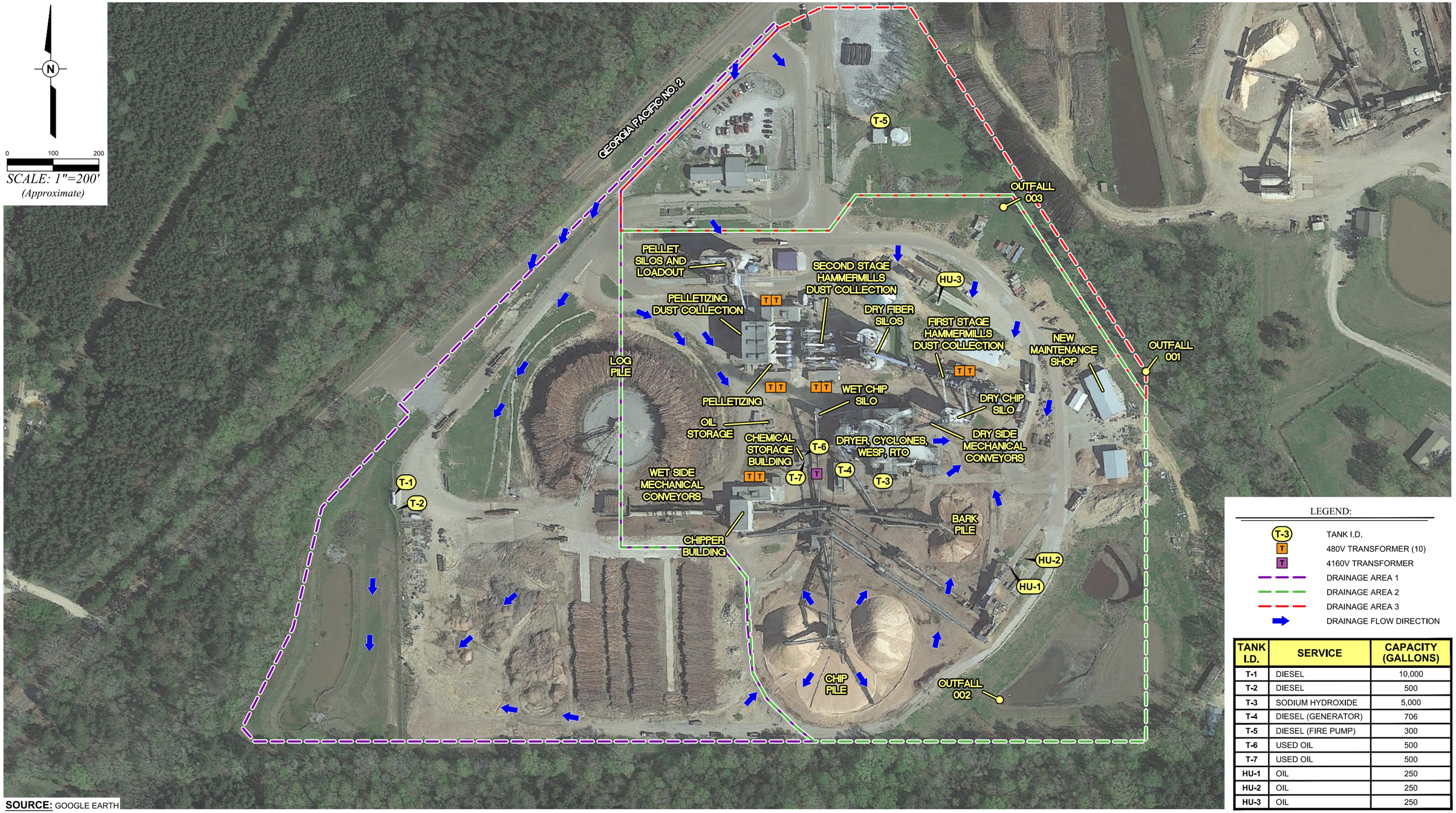
APPENDIX A – FIGURES



SCALE: 1 : 24,000

1 .5 0 1
MILES
1000 0 1000 5000 10,000
FEET
1 0 KILOMETER 1 2
1000 0 METER 1000 2000

PPM CONSULTANTS, INC. www.ppmco.com		DRAX BIOMASS, INC. **AMITE BIOENERGY, LLC** 1763 GEORGIA PACIFIC ROAD NO. 2 GLOSTER, MISSISSIPPI	SITE LOCATION MAP
DRAWN BY: BWH	DRAWN DATE: 10/28/20		FIGURE NUMBER 1
PROJECT NUMBER: 30065104	PHASE: SPCC		



LEGEND:

- T-3 — TANK I.D.
- T — 480V TRANSFORMER (10)
- T — 4160V TRANSFORMER
- DRAINAGE AREA 1
- DRAINAGE AREA 2
- DRAINAGE AREA 3
- DRAINAGE FLOW DIRECTION

TANK I.D.	SERVICE	CAPACITY (GALLONS)
T-1	DIESEL	10,000
T-2	DIESEL	500
T-3	SODIUM HYDROXIDE	5,000
T-4	DIESEL (GENERATOR)	706
T-5	DIESEL (FIRE PUMP)	300
T-6	USED OIL	500
T-7	USED OIL	500
HU-1	OIL	250
HU-2	OIL	250
HU-3	OIL	250

PPM CONSULTANTS, INC.
www.ppmco.com

DRAWN BY:	DRAWN DATE:
BWH	10/28/20
PROJECT NUMBER:	PHASE:
30065104	SPCC

DRAX BIOMASS, INC.
AMITE BIOENERGY, LLC
1763 GEORGIA PACIFIC ROAD NO. 2
GLOSTER, MISSISSIPPI

SITE MAP
(MAIN SITE)

FIGURE NUMBER
2

APPENDIX B – STARTUP/SHUTDOWN RECORDKEEPING FORM

SHUT DOWN & START UP LOG

UNIT ID: _____

START UP AND SHUT DOWN CRITERIA:

1. Furnace startup/shutdown is proposed as equal to and less than27.8 MMBTU/hr (16.9% of maximum furnace capicity of 2165 MMBTU/hr).
2. Facility shutdown during normal maintenance schedules and periods for repairs.
3. Idle mode is defined as the operation of the furnace at a heat input rated equal to or less than 5.0 MMBTU/hr.

SU/SD Criteria	Start Date	Start Time	End Date	End Time	Comments

APPENDIX C – COMPLIANCE ASSURANCE MONITORING PLAN

COMPLIANCE ASSURANCE MONITORING (CAM) PLANS
Amite BioEnergy, LLC
Gloster, Mississippi

Regenerative Thermal Oxidizer (RTO) – Volatile Organic Compounds (VOC)	
Parameter	**Description**
Indicator	Combustion Chamber Outlet Temperature
Monitoring Approach	Hourly recording of combustion chamber outlet temperature using a thermocouple. Temperature data will be recorded continuously.
Indicator Range	Minimum: Target range: 1500°F, but will be determined during compliance testing, and with an approved emissions testing protocol. The temperature will be optimized to minimize natural gas usage in the RTO while maintaining the desired destruction efficiency.
Response to Indicators Action Level Range	A combustion chamber outlet that is below the applicable minimum threshold temperature during normal operating conditions value will trigger an audible and/or visible alarm in the control room. Amite BioEnergy will take the following immediate corrective actions: * If the temperature cannot be raised to satisfy the applicable minimum threshold within 60 minutes from the start of the excursion, the furnace/dryer will be shutdown. The cause of the excursion must be corrected and documented prior to re-starting the furnace/dryer. The Rotary Dryer is equipped with a bypass stack for WESP and RTO malfunctions.
Quality Improvement Plan Threshold	Six excursions in a six-month reporting period.
Performance Criteria Data Representativeness	Maintenance of adequate combustion chamber temperature assures proper destruction of both CO and VOCs; control efficiency is a function of temperature.
Averaging Period	Three-hour average.
Recordkeeping	Combustion chamber temperature is monitoring continuously. The temperature data will be stored in a data acquisition system.
QA/QC Practices and Criteria	Annual calibration or replacement per manufacturer's specifications.

RTO – VOC and Carbon Dioxide (CO)	
Indicator	Annual inspections of burner assemblies, blowers, fans, dampers, refractory lining, oxidizer shell, fuel lines, and ductwork.
Monitoring Approach	Inspections of burner assemblies, blowers, fans, dampers, refractory lining, oxidizer shell, fuel lines, and ductwork will be conducted annually.
Indicator Range	N/A
Response to Indicators Action Level Range	N/A
Quality Improvement Plan Threshold	N/A
Performance Criteria Data Representativeness	Inspections will ensure proper operation of the burner and RTO.
Averaging Period	Annually.
Recordkeeping	Manual logs of inspections.
QA/QC Practices and Criteria	Logs for these inspections will be reviewed promptly after the annual inspection is performed to ensure that repairs are made or replacement parts are installed in a timely manner.
Wet Electrostatic Precipitator (WESP) – Particulate Matter (PM_{10} and $_{PM2.5}$)	
Indicator	Continuous monitoring of Power (each field) in kW.
Monitoring Approach	Continuously monitor power after each of the three transformer/rectifier sets.
Indicator Range	Change in power (initial proposed ranges for each 3 fields of 20.38 kW); range will be determined during verification of operational status. Power will be optimized during facility compliance testing. A power that is below the applicable minimum threshold value during normal operating conditions will trigger an audible and/or visible alarm in the control room.
Response to Indicators Action Level Range	If the ammeter indicates a change in power, Amite BioEnergy will take the following immediate corrective actions: • Review power levels for irregularities; • Assess the cause of the change in power; • If the power cannot be raised to satisfy the applicable

	minimum threshold within 60 minutes from the start of the excursion, the furnace/dryer will be shutdown. The cause of the excursion must be corrected and documented prior to re-starting the furnace/dryer. • If review of the other parameters indicates a malfunction, furnace/dryer and WESP will be shutdown. The furnace is equipped with a bypass stack for rotary dryer, WESP, and RTO malfunctions.
Quality Improvement Plan Threshold	Six excursions in a six-month reporting period.
Performance Criteria Data Representativeness	Power affects the collection efficiency and is typically low and constant. An increase or drop in power indicates a malfunction.
Averaging Period	The power will be averaged over a 3-hour period.
Recordkeeping	Power is recorded continuously in a data acquisition system.
QA/QC Practices and Criteria	Annual calibration or replacement per manufacturer's recommendations.
Regenerative Catalytic Oxidizer (RCO) – VOCs	
Indicator	Combustion Chamber Outlet Temperature
Monitoring Approach	Hourly recording of combustion chamber outlet temperature using a thermocouple. Temperature data will be recorded continuously.
Indicator Range	Minimum: Target range: 650°F (requested range from manufacturer), but will be determined during compliance testing and with an approved emission testing protocol. The temperature will be optimized to minimize natural gas usage in the RCO while maintaining the desired destruction efficiency.
Response to Indicators Action Level Range	A combustion chamber outlet that is below the applicable minimum threshold temperature during normal operating conditions value will trigger an audible and/or visible alarm in the control room. Amite BioEnergy will take the following immediate corrective actions: * If the temperature cannot be raised to satisfy the applicable minimum threshold within 60 minutes from the start of the excursion, half of the hammermills and pellet coolers will be shut down

	because the RCO has 2 parallel sides. The current design capacity of each chamber is 130,000 SCFM for a total of 260,000 SCFM for two chambers. After the start of the excursion, the blower flow rate shall be reduced to 130,000 SCFM. The cause of the excursion must be corrected and documented prior to re-starting the hammermills and pellet coolers.
Quality Improvement Plan Threshold	Six excursions in a six-month reporting period.
Performance Criteria Data Representativeness	Maintenance of adequate combustion chamber temperature assures proper destruction of VOCs; control efficiency is a function of temperature.
Averaging Period	Three-hour average.
Recordkeeping	Combustion chamber temperature is monitoring continuously. The temperature data will be stored in a data acquisition system.
QA/QC Practices and Criteria	Annual calibration or replacement per manufacturer's specifications.
Hammermill Pneumatic System Filters (Baghouse) – PM_{10} and $PM_{2.5}$	
Indicator	Pressure drop across filters
Monitoring Approach	Differential pressure gauge
Indicator Range	Pressure drop range of 0.25" to 8" H_2O. The cleaning cycle is on a timer.
Response to Indicators Action Level Range	If a change in pressure drop outside the indicator range is observed, Amite BioEnergy will take the following immediate corrective actions: • Conduct visual observation of Hammermill cyclones; • Inspect filters for any tears, leaks or plugging; • Inspect hammermill filters; and • Determine if there is an excursion of visual observations. Differential pressure will be optimized during inspections or maintenance activities.
Quality Improvement Plan Threshold	Six excursions in a six-month reporting period.
Performance Criteria Data Representativeness	Indication of performance degradation by increase or decrease in pressure drop outside the operational ranges.
Averaging Period/Frequency	Once daily reading

Recordkeeping	All pressure drop measurements will be recorded in an electronic database.
QA/QC Practices and Criteria	Calibration of differential pressure gauge per manufacturer's specifications and annual inspection of hammermill filters.
Pellet Cooler Pneumatic System Filters (Baghouse) – PM_{10} and $PM_{2.5}$	
Indicator	Pressure drop across filters
Monitoring Approach	Differential pressure gauge
Indicator Range	Pressure drop range of 0.25" to 8" H_2O. The cleaning cycle is on a timer.
Response to Indicators Action Level Range	If a change in pressure drop outside the indicator range is observed, Amite BioEnergy will take the following immediate corrective actions: • Conduct visual observation of Hammermill cyclones; • Inspect filters for any tears, leaks or plugging; • Inspect hammermill filters; and • Determine if there is an excursion of visual observations. Differential pressure will be optimized during inspections or maintenance activities.
Quality Improvement Plan Threshold	Six excursions in a six-month reporting period.
Performance Criteria Data Representativeness	Indication of performance degradation by increase or decrease in pressure drop outside the operational ranges.
Averaging Period/Frequency	Once daily reading
Recordkeeping	All pressure drop measurements will be recorded in an electronic database.
QA/QC Practices and Criteria	Calibration of differential pressure gauge per manufacturer's specifications and annual inspection of hammermill filters.
Regenerative Catalytic Oxidizer (RCO) – VOCs	
Indicator	Annual inspections of burner/combustion chamber to ensure that all refractory modules are in good shape and that the ceramic media shows no sign of degradation. Remove the main fan access hatch and examine the wheel for signs of particulate deposition or corrosion. Examine the main fan coupling to ensure proper alignment is being maintained. Examine the combustion burner internals. Verify instrumentation calibration.

Monitoring Approach	Inspections for burner assemblies, blowers, fans, dampers, refractory lining, oxidizer shell, fuel lines, and ductwork will be conducted annually.
Indicator Range	N/A
Response to Indicators Action Level Range	N/A
Quality Improvement Plan Threshold	N/A
Performance Criteria Data Representativeness	Inspections will ensure proper operation of the burners and RCO.
Averaging Period	Annually
Recordkeeping	Manual logs of inspections
QA/QC Practices and Criteria	Logs for these inspections will be reviewed promptly after the annual inspection is performed to ensure that repairs are made or replacement parts are installed in a timely manner.

APPENDIX D – DEVIATIONS AND CAUSES

For each deviation, the facility must record the cause of the deviation and corrective action taken to correct the deviation. Below is an example list of causes:

Code	Cause	Group
0	Unknown	Deviation
1	Equipment: startup/shutdown	SU/SD
2	Equipment: Emergency Stop	Upset Condition
3	Equipment: Safety Stand Down	SU/SD
4	Power Outage	Upset Condition
5	Dryer: Idling While Evaluating Equipment	SU/SD
6	Dryer: Computer or Communication Fault	Upset Condition
7	Dryer: ID Fan Fault/Failure/Malfunction	Malfunction
8	Dryer: Other Component Fault/Failure/Malfunction	Malfunction
9	Dryer: Ash System Mechanical Malfunction/Repair	Malfunction
10	Dryer: Burner Fault/Failure/Malfunctions/Repair	Malfunction
11	Dryer: Cyclone Plug/Malfunctions/Repair	Malfunction
12	RTO/RCO: Air Supply Component Fault/Failure/Malfunction	Malfunction
13	RTO/RCO: Computer or Communication Fault	Upset Condition
14	RTO/RCO: Exhaust Fan Component Fault/Failure/Malfunction	Malfunction
15	RTO/RCO: Electrical problems or power outage	Upset Condition
16	RTO/RCO: Low Temperature Shutdown	Upset Condition
17	RTO/RCO: High Temperature Shutdown	Upset Condition
18	RTO/RCO: Valve Fault/Failure/Malfunction	Malfunction
19	RTO/RCO: Other Component Fault/Failure/Malfunction	Malfunction
20	RTO/RCO: Gas Supply Issues or Outage	Upset Condition
21	RTO/RCO: Online Bakeout	SU/SD
22	RTO/RCO: Rerouted Airflow to another chamber	General Condition
23	WESP: Computer or Communication Fault	Upset Condition
24	WESP: Damper Fault/Failure/Malfunction	Malfunction
25	WESP: Weak or Damaged Field, Repaired	Upset Condition
26	WESP: Electrical Problems or Power outage	Upset Condition
27	WESP: Other Component Fault/Failure/Malfunction	Malfunction
28	WESP: Water Supply Issues or Outage	Upset Condition
29	WESP: TR Fault/Failure/Malfunction	Malfunction
30	WESP: TR Flush and Maintenance	General Condition
31	WESP: Rerouted Airflow to another chamber	General Condition
31	Grecon Fault/Failure/Malfunction	Malfunction
32	Monitor or Probe Issues	CMS Malfunction
33	Severe Weather	Upset Condition
34	QAQC or Performance Testing	SU/SD
35	Pellet Mill: Not Operating	General Condition

Code	Cause	Group
36	Facility-wide Shutdown: Testing Equipment	General Condition
37	Filter Bag Replacement: New Bag Filters	General Condition
38	Unknown	Deviation
39	Equipment: startup/shutdown	SU/SD

Malfunctions:

A Malfunction is any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. 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.

A malfunction may result in a deviation. Therefore, each malfunction should be well documented and corrective should be as soon as possible.

Operational Plans:

A Site-Specific Monitoring Plan (SSMP) and Startup, Shutdown, and Malfunction Plan shall be developed to define each operational parameter described above, non-deviation processes based on fail-safe criteria, and malfunctions.

The following exceptions are not considered deviations:

1. Drying unit shutdown where the feed rate is 0% and the furnace output power is 0.0 MMBTU/hr
2. Pelletizing unit shutdown where pellet output is 0.0 Metric tons per hour (MT/hr).
3. Maintenance and repair that is necessary to repair equipment while the drying unit is in idle mode. Idling of the unit during maintenance and repair prevents having to completely shut down the unit. Cold startups of the unit will take several hours and can result in high emissions.
4. Conducting monitor QAQC.
5. Conducting performance testing on a control unit.
6. Monitor out of control or being repaired.
7. Monitoring system malfunction. Repairs associated with monitoring system malfunctions or out-of-control periods
8. Fail-safe shutdown of a control unit because of safety concerns. For example, the RTO may shutdown because of a high oxygen content in the air stream that may result in an explosion inside the RTO chamber.

9. Power outages are recorded since the data collection systems see this as a CMS downtime but should be considered an allowable malfunction.
10. Computer failure or offline due to computer replacement, power outages, service outage, or software upgrades can be considered a malfunction or required maintenance.

In accordance with §63.6(e)(3), The owner or operator of an affected source must develop a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction; and a program of corrective action for malfunctioning process, air pollution control, and monitoring equipment used to comply with the relevant standard. The plan should ensure the following:

- The operator operates and maintains each affected source, including associated air pollution control and monitoring equipment, in a manner which satisfies the general duty to minimize emissions.
- The operator is prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions.
- The Plan should define the malfunctions and the required actions to correct the malfunction in a timely manner. In addition, a malfunction log should be kept and the report kept on file that provides the information required by §63.10(b)(2).

APPENDIX E – MALFUNCTIONS RECORDKEEPING FORM

WEST FRASER
MALFUNCTION RECORD KEEPING FORM

Deviation Description	*Cause*	*Start Date*	*Start Time*	*End Date*	*End Time*	*Duration*	*Corrective Action*

APPENDIX F – ANNUAL REVIEW OF STARTUP, SHUTDOWN, AND MALFUNCTION PLAN

ANNUAL REVIEW OF STARTUP, SHUTDOWN, AND MALFUNCTION PLAN

AMITE BIOENERGY LLC
GLOSTER, MISSISSIPPI

By my signature below, I have reviewed the SSMP for the Amite BioEnergy facility and agree to the terms of this SSMP and also agree to abide by the procedures contained within this document.

Date	**Print Name**	**Signature**
	Jeff Crawford	