

Effingham Pellets, LLC
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DUST CONTROL PLAN

Project: Effingham Containerized Pellet Mill

Location: Effingham, S.C.

Revision	Date	Description	Responsible Engineer	Reviewed By	Approved By
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1. General

Effingham Pellets, LLC operates a containerized pellet mill in Effingham, S.C. The plant processes dry southern pine shavings into industrial grade wood pellets. The plant is small, with a design capacity of 5 metric tons per hour (MTPH).

The purpose of this Dust Control Plan is to use best dust control practices to prevent fugitive dust emissions into the atmosphere in accordance with South Carolina Regulation 61-62.5, Standard 4, Section X and SC Regulation 61-62.6.

The plant design incorporates both passive and engineered controls to minimize fugitive dust emissions that could otherwise occur from handling and storage of the wood shavings, pelletizing equipment, and the truck loadout of finished products. Best management practices will be followed in the operation and maintenance of the equipment to further limit fugitive dust emissions in compliance with the latest OSHA and NFPA guidelines for fugitive dust emissions.

Process Description

Dry material will be brought to the Effingham Pellets facility via trucks equipped with a walking floor trailer. The dry material trucks will be weighed upon arrival. The shavings will be unloaded onto the floor of an enclosed building on the site, then loaded with mobile equipment onto a hydraulically operated feed system and enclosed conveyor. The conveyor system will deliver the material to a small, enclosed storage bin on top of the “pellet box” structure. The entire pelletizing process takes place inside the enclosed pellet box.

The pellet box contains a dry hammermill to reduce the particle size of the raw material. The hammermill is equipped with a product capture bag filter to control particulate matter (PM) emissions.

Following the hammermill, the wood fiber is sent through a hopper, then conveyed to a pellet mill. The pellet mill compresses the wood fiber into pellets by rolling and squeezing the material through holes in a die. The process of squeezing the wood fibers generates heat, which causes the wood’s natural lignin to flow. The wood lignin acts as a natural glue, holding the pellets together.

The wood pellets proceed directly from the pelletizer to a cooler. Ambient air is used as a cooling medium in a direct-contact heat exchanger. The exhaust air from the pellet cooler will be controlled by a cyclone.

The finished pellets exit the pellet box through another enclosed conveyor system and are delivered to the silo. The silo is vented to atmosphere.

The pellets are discharged out of the silo to a screen (this is all enclosed) and the accepted pellets land on a belt conveyor (covered, but not enclosed) that feeds the truck trailers for off-site transport.

2. S.C. Dept. of Health & Environmental Control - Condition C.8

The purpose of this Dust Control Plan is to use best dust control practices to prevent fugitive dust emissions into the atmosphere in accordance with South Carolina Regulation 61-62.5, Standard 4, Section X and SC Regulation 61-62.6.

2.1 Dust sources and control methods for roadways, railcar, truck and mobile equipment operations;

2.1.1 Roadways

The Effingham pellet mill site is located in South Carolina in humid environment. While using water as an active dust control method is not necessarily effective in hot and dry

environments, it is effective in more humid locations where dust from gravel roads is not normally an issue.

2.1.2 Watering of Site Roads

If required during the dry season, water trucks will water the roads to suppress any dust present and operate the full length of the shift(s) so that fugitive dust emissions do not interfere or significantly impact the surrounding environment or adjacent public and private properties. Effingham pellets will apply water so that the surface is visibly moist on trafficked roads and in the areas where work is taking place.

2.1.3 Use of Chemical Dust Suppressant Methods

Owing to the humid nature of the South Carolina climate, and that watering roads should only be occasionally required, Effingham pellets does not consider that the use of chemical dust suppressants will be necessary.

2.1.4 Water Truck trips will be recorded in Water Truck Log daily.

2.1.5 Plant Speed Limits

Truck and Mobile Equipment operation will comply with posted site wide 10-mph speed limit.

2.1.6 Prevention of Spilled Materials

In accordance with SC Code of Laws Sections 56-5- 4100 and 56-5-4110, these laws require that haul trucks to prevent the escape of materials loaded onto vehicles, escaped substances or cargo be cleaned from highways, and loads and covers be firmly attached. The signage shall be posted at all truck entrances and exits.

2.2 Designated dust control methods for each specific material handled.

If fugitive dust is observed from above locations, the facility will implement corrective action, and record the event in the shift production report. Dust sources and control methods for material handling and storage. Frequency of control should be included where appropriate;

2.2.1 Truck Unloading

Trucks of raw material is unloaded inside of the warehouse utilizing walking floor beds inside of the truck trailers. The walking floor beds gently unload the raw material, with very little, if any, dust. The dust is not expected to leave the warehouse building.

2.2.2 Raw Materials Storage Warehouse

The Raw Materials Storage Warehouse is an enclosed warehouse. The building is normally closed, and no fugitive dust is expected to be generated

2.2.3 Walking Floor

The Raw Materials warehouse also contains a Walking Floor which is loaded from the stockpile of raw material by front end loader, and gently pushes the material into a screw conveyor. Minimal dust is expected to be generated, nor is any fugitive dust expected to exit the warehouse.

2.2.4 Screw Conveyor

The screw conveyor does not lift and drop the material, but moves it gently through the conveyor tube to deposit onto the enclosed chain conveyors feeding the pellet boxes. The

parts of the screw conveyor filling the subsequent chain conveyor is completely enclosed, and no dust is expected to be generated.

2.2.5 Chain Conveyors

Chain conveyors are completely enclosed, and the product is moved slowly and “en masse” to prevent dust from becoming airborne.

2.2.6 Pellet Boxes

The pellet boxes are completely sealed and equipped with screens and active dust control systems. The active dust control systems are discussed in a later section. No fugitive dust is expected to leave the pellet boxes. The only dust leaving the pellet boxes should be only what exhausts under permit from the active controls such as baghouse or filter.

2.2.7 Belt Conveyors

Belt conveyors are designed to move slowly, and also have a passive system of conveyor covers and wind screens to prevent airborne fugitive dust emissions.

2.2.8 Covers and Wind Screens

Each conveyor will be provided with passive control by means top covers and side screens to prevent airborne fugitive dust emissions.

2.2.9 Belt Scrapers and Cleaners

The conveyors are equipped with primary and secondary belt scrapers/cleaners, just after the head pulley, which prevent material being carried to the return belt. A final belt plough will be used in front of the drives and the tail pulley to ensure further trapped material is not carried back around the pulleys and allowed to spill. Any material which manages to spill from the belt cleaners is collected and returned to the Raw Materials Warehouse.

2.2.10 Transfer Areas

As most dust is generated in the Transfer Areas, those areas are expected to be the primary control means. Transfer areas are locations where product or pellets is transferred from one conveyor to another, or loaded onto a conveyor. Airborne dust is generated by moving and dropping material. Passive controls will be provided by providing completely enclosed transfer chutes and by engineering proper heights and lengths in containment areas to allow any dust generated sufficient time to settle inside the containment area, as well as the proper sealing of containment areas, such as chutes and head boxes.

Chain conveyors are entirely enclosed and move material “en masse” and the transfer areas control any fugitive dust issues.

Belt conveyors have rubber skirting mounted to the skirt boards along the length of the containment area, along with inlet and outlet curtains over the conveyor belt at the chute openings to provide passive containment.

The conveyors are also under active control with negative pressure as defined below.

2.2.11 Silo

The silo receives the product from the enclosed chain conveyors and bucket elevators, all of which have passive dust control design, and are under an active control negative pressure (defined below). The pellets have been screened and polished when leaving the pellet boxes and should have no fugitive dust.

2.2.12 Load out

The loadout receives the product from the silo and passes through another dust control screen to ensure no dust is present. There should be no fugitive dust from the truck loading operation.

2.2.13 Conveyor and Pellet Mill Emergency Dump

Residue wood and pellet piles from emergency dumps will be located under the supply and discharge conveyors to provide constant observation. If fugitive dust is observed, the facility will spray water on pile and/or handling of this pile as in adding or removing chips from the pile.

The above list will be observed throughout the shift for fugitive dust. If any fugitive dust is observed, the shift supervisor will stop the fugitive dust, implement corrective action, and record the event and corrective action on shift production report.

2.3 A maintenance schedule for all dust control equipment as well as a minimum inventory of spare parts. Spares will include: a complete replacement set of bags, spare fan/motor, spare explosion vents, and spare pressure sensors.

2.3.1 O&M procedures for point sources.

2.3.2 Water Truck is a rental that is serviced as needed

2.3.4 BMP of dust control equipment to include the following sources:

- Negative Air Pressure and Pellet Box Baghouse Filters - Each pellet box is equipped with a series of screens, baghouses, and filters all under negative pressure. This negative pressure extends into the connected conveyors, causing a negative pressure throughout the process equipment and migrates any dust particles to the collection devices for reuse. The negative pressure throughout the conveying system and pellet box equipment ensures all dust is collected within the pellet box collection devices, and is not emitted as fugitive dust.
- Screening - Screens are installed at the exit of each pellet box, and are under negative pressure for active dust control. There is a final screen prior to loading the trucks with finished and polished pellets. Any dust collected by the screening system is returned to the Raw Materials Warehouse and blended back into the product supply stream.
- Baghouse and Filters - Each pellet box is equipped with a baghouse and vent filters designed to keep a negative pressure on the entire pelletizing system, and vent to the atmosphere at a permit point designed to retain more than 99.9% of any captured dust and vent within the parameters of the site permit. These are the only locations which should be venting any fugitive dusts, and are designed to be within the state limit requirements.
- Electronic Controls - Electronic controls are provided to indicate belt misalignment, plugged chutes, stopped conveyors, etc. Each of these control systems assists with stopping and/or controlling spillage and subsequent fugitive dust issues.
- If water truck malfunctions water truck will be replaced immediately.
- 10 mph signs unreadable will be cleaned and/or repaired immediately

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- 2.4 Written procedures for all dust control equipment and systems. These procedures shall be based on the manufacturer's recommendations when available, at a minimum.
- 2.4.1 The above equipment list will be observed throughout the shift for fugitive dust. If any fugitive dust is observed the facility will immediately implement corrective action. The facility shall repair and/or replace malfunctioning dust control equipment within 36 hours. These procedures shall be based on the manufacturer's recommendations when available, at a minimum;
- 2.4.2 O&M for Point Sources.
- 2.4.3 BMP for fugitive dust sources
- Effingham will perform per shift fugitive dust observations on all fugitive dust control equipment and systems to mitigate fugitive dust. The facility will record fugitive dust observation results and corrective actions in shift production report.
- 2.5 Training plans for dust control methods, equipment, and systems.
- 2.5.1 New hire orientation dust management.
- 2.5.2 Annual dust management training for all plant personnel
- 2.5.3 Training roster to be maintained electronically and provided to SCDHEC upon request.
- 2.6 Modifications and/or contingency plans required for changing weather conditions, failure of equipment, electrical power failure, and any other factors that may influence the effectiveness of control methods;
- 2.6.1 Rain observation is recorded on water truck log sheet.
- 2.6.2 Electrical Outage does not impact water truck usage.
- 2.7 Steps to mitigate fugitive particulate matter to go beyond property boundaries.
- 2.7.1 Neighbors have been provided a phone number to allow them to file complaints anytime of the day.
- Phone Number + 1 TBD
 - Neighbor will contact Thomas Brodie, CI Lumber
- 2.7.2 Dust complaints will be recorded in the Dust Complaint Log and the Regional SC DHEC office shall be informed within 24 hours from the complaint.
- 2.7.3 If dust complaint is received, by the facility, the facility will investigate to determine root cause and attempt to contact the neighbor to inform them of cause and solution.
- 2.7.4 The facility will log dust complaint in log including wind speed and direction.
- 2.7.5 If fugitive dust is observed, the facility will stop fugitive dust, implement corrective action, and record the event on daily shift production report.
- 2.8 Method to document plan requirement execution.
- 2.8.1 All records (electronically or hard copy) will be maintained on site for a period of 5 years and provided to SCDHEC upon request. The records are:
- Water Truck usage log, hardcopy
 - Complaint Log, electronically
 - Plan Update Log, electronically

- Training roster, electronically
- SCDHEC update approval letters, hardcopy

2.9 Schedule for the periodic review and update of the plan.

Dust control best management plan will be updated if SCDHEC and/or Effingham determines additional control measures are needed or current dust control measures need modification. All updated plans before implementation will be submitted to SCHDEC for approval. Effingham will submit updated plan to SCDHEC Director of the Air Permitting Division for Department approval. Once Effingham receives SCDHEC approval of plan, facility will immediately implement approved plan.

3. Conclusion

The engineered approach of both passive and active dust control use of the best available practices and technology at Effingham Pellets and should present an operation free from fugitive dust.

ATTACHMENTS:

1. Site map
2. Water Truck log
5. Dust Complaint log
6. Semi-annual review/update of the BMP for Dust Control

END OF DUST CONTROL PLAN

