

**Renewable Biomass Group
Potential Emission Calculations**

Table C-23. Pelletizing Operating Parameters

Emission Source	Annual Throughput¹	Units
<i>Total Capacity</i>		
Dry Hammermills	246,234	tons/year
Pellet Mills	497,000	tons/year
Pellet Coolers	497,000	tons/year
<i>Volumetric Capacity</i>		
Pellet Density ²	40	lb/ft ³
Pellet Mill Nos. 1 - 3 ³	24,850,000	ft ³ /year
Pellet Cooler Nos. 1 - 3 ³	24,850,000	ft ³ /year

1. Annual throughput based on finished pellet production capacity.
2. Pellet density assumed based on industry information.
3. Potential volume throughput estimated as follows: Potential Mass Throughput (tons/year) * 2,000 (lb/ton) / Pellet Density (lb/ft³)

Table C-24. Hammermill and Pellet Mill/Cooler Dust Collector Control Device Operating Parameters and Potential PM Emissions

Control Device	Flow Rate (dscfm)¹	Loading Rate (gr/dscf)¹	Potential Emissions²	
			Filterable PM/PM₁₀/PM_{2.5} (lb/hr)	(tpy)
Dry Hammermill Cyclones	28,080	0.010	2.41	10.54
Pellet Mill/Cooler Cyclones	90,000	0.010	7.71	33.79

1. Flowrate provided by Nexus PMG. Loading rate assumed.
2. Potential emissions are calculated as follows:
 Potential Emissions (lb/hour) = Flowrate (dscfm) * 60 (mins/hr) * Pollutant Loading (grs/dscf) / 7,000 (gr/lb)
 Potential Emissions (tons/year) = Potential Emissions (lb/hour) * Annual Operation (hours/year) / 2,000 (lbs/ton)
 Where annual emissions assume 8,760 hours of operation per year for conservatism.

Table C-25. Hammermills Potential VOC and HAP Emissions

Pollutant	Factor (lb/ton)	Control Efficiency⁵ (%)	Potential Emissions⁶	
			(lb/hr)	(tpy)
VOC ¹	2.5	95%	3.51	15.39
Acetaldehyde ¹	4.00E-03	95%	0.01	0.02
Formaldehyde ¹	8.00E-03	95%	0.01	0.05
Methanol ¹	4.00E-03	95%	0.01	0.02
Acrolein ²	7.80E-03	95%	0.01	0.05
Phenol ³	4.50E-03	95%	0.01	0.03
Propionaldehyde ²	3.00E-03	95%	0.00	0.02
Total HAP ⁴	-		0.04	0.19

1. Emission factors from GA EPD guidance for Hammermills at Wood Pellets Facilities. Emissions are quantified from the overall hammermilling processes (total throughput), not individually by each component. Therefore, annual emissions are based on the annual throughputs through the overall hammermilling process.
2. Emission factors from Enviva dry hammermill testing as the maximum test result. Emissions are quantified from the overall hammermilling processes (total throughput), not individually by each component. Therefore, annual emissions are based on the annual throughputs through the overall hammermilling process.
3. Emission factors from AP-42 Section 10.6.2-7 for a hammermill. Emissions are quantified from the overall hammermilling processes (total throughput), not individually by each component. Therefore, annual emissions are based on the annual throughputs through the overall hammermilling process.
4. Total HAP is the sum of all individual HAP emissions.
5. Per GA EPD guidance for storage/handling at Wood Pellets Facilities, a 95% DRE is applied for VOC and HAP emissions routed to an RTO. Emissions from the dry hammermills will be routed to the dryer and will be treated through the RTO.
6. Potential emissions are calculated as follows:
 Potential Emissions (lb/hour) = Potential Emissions (tpy) * 2,000 (lb/ton) / Annual Operation (hr/yr)
 Potential Emissions (tons/year) = Emission Factor (lb/ton) * (1 - Control Efficiency (%)) * Annual Throughput (tons/year) / 2,000 (lbs/ton)
 Where annual emissions assume 8,760 hours of operation per year for conservatism.