

**Renewable Biomass Group
Potential Emission Calculations**

Table C-8. Green Hammermills Operating Parameters

Emission Source	Annual Throughput (tons/year)¹
Green Hammermills	337,968

1. Annual throughput of green residuals that require processing through the green hammermill, based on capacity of green hammermill.

Table C-9. Green Hammermills 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)
Green Hammermill Filters	3,000	0.010	0.26	1.13

1. Flowrate provided by Nexus PMG. Loading rate assumed.

2. Potential emissions are calculated as follows:

$$\text{Potential Emissions (lb/hour)} = \text{Flowrate (dscfm)} * 60 \text{ (mins/hr)} * \text{Pollutant Loading (grs/dscf)} / 7,000 \text{ (gr/lb)}$$

$$\text{Potential Emissions (tons/year)} = \text{Potential Emissions (lb/hour)} * \text{Annual Operation (hours/year)} / 2,000 \text{ (lbs/ton)}$$

Where annual emissions assume 8,760 hours of operation per year for conservatism.

Table C-10. Green Hammermills Potential VOC and HAP Emissions

Pollutant	Emission Factor (lb/ton)	Control Efficiency⁶ (%)	Potential Emissions⁷	
			(lb/hr)	(tpy)
VOC ¹	1.08	95%	2.08	9.11
Acetaldehyde ²	4.00E-03	95%	0.01	0.03
Formaldehyde ²	8.00E-03	95%	0.02	0.07
Methanol ²	4.00E-03	95%	0.01	0.03
Acrolein ³	1.08E-02	95%	0.02	0.09
Phenol ⁴	4.50E-03	95%	0.01	0.04
Propionaldehyde ³	1.88E-02	95%	0.04	0.16
Total HAP ⁵	-		0.10	0.42

1. Emission factor from Westervelt wet classisizers testing. Emissions from the Westervelt wet classisizers were controlled with an RTO; therefore, the uncontrolled emission factor was taken by back-calculating the controlled emission factor assuming a 95% control efficiency and a 10% safety factor applied.

2. Emission factors from GA EPD guidance for Hammermills at Wood Pellets Facilities.

3. Emission factors for a dry hammermill from Enviva Sampson (NC) permit application.

4. Emission factor from AP-42 Section 10.6.2, Table 10.6.2-7 for a hammermill. Emission factors for other pollutants are non-detect.

5. Total HAP is the sum of all individual HAP emissions.

6. Per GA EPD guidance for storage/handling at Wood Pellets Facilities, a 95% DRE is applied for VOC and HAP emissions routed to an oxidizer. The green hammermill will be routed to the RCO.

7. Potential emissions are calculated as follows:

$$\text{Potential Emissions (lb/hour)} = \text{Potential Emissions (tpy)} * 2,000 \text{ (lb/ton)} / \text{Annual Operation (hr/yr)}$$

$$\text{Potential Emissions (tons/year)} = \text{Emission Factor (lb/ton)} * (1 - \text{Control Efficiency (\%)}) * \text{Annual Throughput (tons/year)} / 2,000 \text{ (lbs/ton)}$$