**Lane Regional Air Protection Agency**
**Simple Air Contaminant Discharge Permit**

## Review Report

**Rexius Forest By-Products Inc.**
1275 Bailey Hill Road
Eugene, Oregon 97402

**Permit No. 207092**

**Source Information:**

| | |
|---|---|
| Primary SIC | 2499 – Wood Products, Not Elsewhere Classified |
| Primary NAICS | 321999 All Other Misc. Wood Product Mfg. |
| Secondary SIC | 5261- Retail Nurseries, Lawn and Garden Supply Stores |
| Secondary NAICS | 444220 - Nursery, Garden Center, and Farm Supply Stores |

| | |
|---|---|
| Source Categories (LRAPA Title 37, Table 1) | B.75: Source which would have actual emissions, if the source were to operate uncontrolled, of 5 or more tons per year of direct $PM_{10}$ if located in a $PM_{10}$ maintenance area, or 10 tons/yr or more of any single criteria pollutant |
| Public Notice Category | III |

**Compliance and Emissions Monitoring Requirements:**

| | |
|---|---|
| Unassigned emissions | N |
| Emission credits | N |
| Special Conditions | N |
| Compliance schedule | N |

| | |
|---|---|
| Source test [date(s)] | N |
| COMS | N |
| CEMS | N |
| Ambient monitoring | N |

**Reporting Requirements:**

| | |
|---|---|
| Annual report (due date) | March 15 |
| Semi-annual reports (due dates) | N |
| SACC (due date) | N |
| GHG Report (due date) | N |
| Monthly report (due dates) | N |

| | |
|---|---|
| Quarterly Report (due date) | N |
| Excess emissions report | Y |
| NSPS Report (due date) | N |
| Other reports | N |

**Air Programs**:

| | |
|---|---|
| NSPS (list subparts) | N |
| NESHAP (list subparts) | N |
| CAM | N |
| Regional Haze (RH) | N |
| Synthetic Minor (SM) | N |
| Part 68 Risk Management | N |
| Title V | N |
| ACDP (SIP) | N |
| Major FHAP Source | N |
| Federal Major Source | N |
| New Source Review (NSR) | N |
| Prevention of Significant Deterioration (PSD) | N |
| Acid Rain | N |
| TACT | N |
| Cleaner Air Oregon | N |

Permittee Identification

1. Rexius Forest By-Products, Inc. owns the Rexius Organics Processing Facility ("Rexius" and/or "the facility") which produces miscellaneous wood products (landscaping and garden materials, industrial fuel, etc.) at its 95724 North Coburg Road, Coburg, Oregon, facility (address is still "Eugene"). The facility's retail location on Highway 99 in Eugene is considered a support facility that exists because of the production facility; emissions from the Eugene retail location were not quantified.

General Background

2. The regulated emission units include but are not limited to various storage/market piles, a bagging process, diesel-fired screens, diesel-fired conveyor, diesel-fired air density separator(s), and diesel-fired horizontally-fed grinders. A propane-fired specialty products (wood) dryer is also included. Air contaminant emissions from this operation include all criteria pollutants. The Coburg facility does not employ biofiltration control that existed at the Eugene location.

Emission Unit Description

3. The emission units regulated by the permit are the following:

| **Emission Unit (EU) Identification** | **EU Description** | **Pollution Control Description (PCD)** | **Installed / Last Modified** |
|---|---|---|---|
| Grinders | Two (2) Peterson Pacific Grinders, diesel-fired | Water spray system | 2013, 2016 |
| Screens | Four (4) Shaker Screens, diesel-fired | NA | 2013, 2016, 2013, 2013 |
| Dryer | One (1) Specialty Products Dryer, propane-fired | NA | 2013 |
| Bagger | One (1) Bagger | Baghouse # 1 | 2013 |
| Piles | Storage and Market Piles | NA | NA |
| Conveyor | One (1) Stacking Conveyor, diesel-fired | NA | 2016 |
| Air Density Separators | Two (2) Air Density Separators, diesel-fired | NA | 2013 and 2025 |

4. The facility uses the permitted equipment to produce soil, soil amendments, fertilizers, and landscaping products. Specifically, the air density separators are used to remove plastic from soil mixes. All other EUs are relatively intuitive by their descriptions in the table above.

Reason for Permit Action and Fee Basis

5. This permit action is a renewal for an existing Simple Air Contaminant Discharge Permit (Simple ACDP) which was issued as an initial permit on December 31, 2019 and expired on December 31, 2024. As the facility submitted a timely renewal application on September 3, 2024, the current permit will remain in effect until final action has been taken on the renewal application. A prior permit (source number 207075) was terminated in September 2013 when all materials were moved to the new site. The Coburg facility processes the same materials and operations that were employed at the Bailey Hill location. Because the actual emissions from calendar year 2024 were greater than 10 tons/year one or more criteria pollutants, this permit action is considered a Simple "high" ACDP renewal under LRAPA 37-0064(2)(a).

Attainment Status

6. The facility is located in an area that has been designated as attainment or unclassified for all criteria pollutants. The facility is outside the Eugene-Springfield UGB as defined in LRAPA 29-0010 which designates the Eugene-Springfield carbon monoxide and $PM_{10}$ maintenance areas. The facility is also located outside the Eugene-Springfield UGB as described in the current Eugene-Springfield Metropolitan Area General Plan, as amended.

Permitting History

7. LRAPA has reviewed and issued the following permitting actions to this facility:

| Date(s) Approved/Valid | Permit Action Type | Description |
|---|---|---|
| 12/31/19 | Simple ACDP | Initial air permit |
| 9/17/21 | Basic Tech. Mod. | Addendum No. 1 to add one new diesel-fired mobile screen to EU-Screens |
| Upon Issuance | Simple ACDP | Renewal |

Production Limitations

8. The permit includes limitations on EU-Piles, EU-Grinding, EU-Screening production to ensure PSEL compliance.

Complaints and Enforcement Actions

9. There have been no LRAPA enforcement actions performed against this facility. The former Bailey Hill facility historically received numerous odor complaints. LRAPA has received one (1) complaint for this facility at its current location.

Source Testing

10. The facility is not required to conduct source testing at this time. LRAPA is not aware of any historical source testing conducted at this facility.

Emission Limitations

11. The facility's EU-Bagger baghouse exhaust and EU-Dryer exhaust are subject to the visible emission limitations under LRAPA 32-010(3). For sources, other than wood-fired boilers, no person may emit or allow to be emitted any visible emissions that equal or exceed an average of 20 percent opacity as a six-minute block average.

12. The facility's EU-Bagger baghouse exhaust and EU-Dryer exhaust are subject to the particulate matter emission limitations under LRAPA 32-015(2). For sources installed, constructed, or modified on or after June 1, 1970 but prior to April 16, 2015 for which there are no representative compliance source test results, the particulate matter emission limit is 0.14 grains per dry standard cubic foot.

13. The exhausts from all engines at the facility are not regulated as stationary sources under the permit, and only the fugitive emissions are regulated from the activities associated with these non-road engines such as grinding, screening, and conveying. See also the NSPS and NESHAP sections of this Review Report.

14. The non-fuel burning equipment at the facility is subject to the process weight rate emission limitations under LRAPA 32-045(1). No person may cause, suffer, allow, or permit the emissions of particulate matter in any one (1) hour from any process in excess of the amount shown in LRAPA 32-8010, for the process weight rate allocated to such process.

15. The facility is required to use a water spray system on the devices in EU-Grinders to prevent PM from becoming airborne.

16. The facility is required to maintain the EU-Bagger Baghouse #1 in a manner that minimizes air contaminant discharges.

Typically Achievable Control Technology (TACT)

17. LRAPA 32-008(2) requires a new units installed or existing emission units modified on or after January 1,1994, meet TACT if the emission unit meets the following criteria: The new or modified emissions unit is not subject to a control technology requirement based on Major NSR in title 38, a Type A State NSR action under title 38, an applicable Standard of Performance for New Stationary Sources in title 46, or any other standard applicable only to new or modified sources in title 30, title 33, title 39 or title 46 for the regulated pollutant emitted; the source is required to have a permit; if new, the emission unit has emissions of any criteria pollutant equal to or greater than one (1) ton per year of any criteria pollutant; ;if modified, the emission unit would have an increase in emissions of any criteria pollutant equal to or greater than one (1) ton per year; and LRAPA determines that air pollution control devices and emission reduction processes in use for the emissions do not represent TACT and that further emission control is necessary to address documented nuisance conditions, address an increase in emissions, ensure that the source is in compliance with other applicable requirements, or to protect public health or welfare, or the environment.

    a. For the market storage piles (EU: Piles) the facility does not use any control technology to control dust. LRAPA has determined that there are typically not control devices or measures to control fugitive particulate from biomass and rock storage piles.

    b. For the grinding activities (EU: Grinders), screening activities (EU: Screens), conveying activities (EU: Conveyor), and fan activities (EU: Air Density Separator) the facility is required to take reasonable precautions to prevent particulate matter from becoming airborne.

    c. For the drying activity (EU: Dryer), LRAPA has not conducted a TACT analysis but believes no VOC controls are typically available for wood drying activities of this size.

    d. EU-Bagger is controlled by a baghouse and is likely to meet TACT.

    e. For the air density separator activities (EU-Air Density Separators), LRAPA has not conducted a TACT analysis but believes no PM controls are typically available for air density separators activities of this size.

    f. All other emissions units at the facility emit less than the TACT thresholds.

Plant Site Emission Limits (PSELs)

18. Provided below is a summary of the baseline emissions rate, netting basis, and PSELs for this facility.

| Pollutant | Baseline Emission Rate (TPY) | Netting Basis | | Plant Site Emission Limit (PSEL) | | PSEL Increase Over Netting Basis (TPY) | Significant Emission Rate (TPY) |
|---|---|---|---|---|---|---|---|
| | | Previous (TPY) | Proposed (TPY) | Previous PSEL (TPY) | Proposed PSEL (TPY) | | |
| PM | NA | 0 | 0 | 24 | 13 | 13 | 25 |
| $PM_{10}$ | NA | 0 | 0 | 14 | 6.0 | 6.0 | 15 |
| $PM_{2.5}$ | NA | 0 | 0 | 9 | 2.9 | 2.9 | 10 |
| CO | NA | 0 | 0 | 99 | -- | NA | 100 |
| $NO_X$ | NA | 0 | 0 | 39 | -- | NA | 40 |

| Pollutant | Baseline Emission Rate (TPY) | Netting Basis | | Plant Site Emission Limit (PSEL) | | PSEL Increase Over Netting Basis (TPY) | Significant Emission Rate (TPY) |
|---|---|---|---|---|---|---|---|
| | | Previous (TPY) | Proposed (TPY) | Previous PSEL (TPY) | Proposed PSEL (TPY) | | |
| $SO_2$ | NA | 0 | 0 | 39 | -- | NA | 40 |
| VOC | NA | 0 | 0 | 39 | 4.4 | 4.4 | 40 |
| GHG | NA | 0 | 0 | NA | -- | NA | 75,000 |

a. The facility does not have a baseline emission rate for pollutants other than $PM_{2.5}$ and GHGs because the facility was not in operation during either the 1977 or 1978 baseline year. A baseline emission rate is not established for $PM_{2.5}$ in accordance with LRAPA 42-0048(3). The facility has no baseline for GHGs because the facility did not request a baseline for this pollutant.
b. The netting basis for all pollutants is 0 (zero) tons/year in accordance with LRAPA 42-0046(4) and 42-0040(2)&(3).
c. In accordance with LRAPA 42-0041(2), the PSEL for all pollutants are set at the potential to emit level. The previous PSELs for this facility were set at the Generic PSEL levels. PSELs for $NO_X$, CO, $SO_2$, and GHG were not established since the potential to emit for these pollutants are below the respective de minimis levels in LRAPA's title 12.
d. The baseline year, netting basis, and SER are not applicable for limiting federal HAPs. The facility does not have a potential-to-emit for federal HAPs that will exceed the major source thresholds for individual federal HAPs and aggregate federal HAPs of 10 TPY and 25 TPY, respectively.
e. Compliance with the PSELs is determined through tracking storage pile volumes, amount of material grinded, screened, and dried, and amount of rock stored on a 12-month rolling basis to show that the respective amounts are less than the production limits listed in the permit.

Federal Hazardous Air Pollutants/Toxic Air Contaminants

19. The facility does not have a potential-to-emit for federal HAPs that will exceed the major source thresholds for individual federal HAPs and aggregate federal HAPs of 10 TPY and 25 TPY, respectively. Therefore, the facility is considered a minor or area source of federal HAPs.

20. Under the Cleaner Air Oregon program, only existing sources that have been notified by LRAPA and new sources are required to perform risk assessments. This source has not been notified by LRAPA and is, therefore, not yet required to perform a risk assessment or report annual emissions of toxic air contaminants. LRAPA required reporting of approximately 600 toxic air contaminants in 2016 and regulates approximately 260 toxic air contaminants that have Risk Based Concentrations established in the rule. All federal HAPs are on the list of approximately 600 toxic air contaminants. After the source is notified by LRAPA, they must update their inventory and perform a risk assessment to see if they must reduce risk from their toxic air contaminant emissions. Until then, sources will be required to report toxic air contaminant emissions triennially.

21. Provided below is a summary of the federal HAP and CAO TAC emission estimates based on the potential emissions as calculated in the emission detail sheets.

| Pollutant | CAS Number/DEQ ID | Potential Emissions (lbs/yr) | Federal HAP | CAO Air Toxic |
|---|---|---|---|---|
| Formaldehyde | 50-00-0 | 180 | Yes | Yes |
| Methanol | 67-56-1 | 140 | Yes | Yes |

Toxics Release Inventory

22. The Toxics Release Inventory (TRI) is a federal program that tracks the management of certain toxic chemicals that may pose a threat to human health and the environment, over which LRAPA has no regulatory authority. It is a resource for learning about toxic chemical releases and pollution prevention activities reported by certain industrial facilities. Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) created the TRI program. In general, chemicals covered by the TRI program are those that cause:
    - Cancer or other chronic human health effects;
    - Significant adverse acute human health effects; or
    - Significant adverse environmental effects.

    There are currently over 650 chemicals covered by the TRI program. Facilities that manufacture, process or otherwise use these chemicals in amounts above established levels must submit annual TRI reports on each chemical. NOTE: The TRI program is a federal program over which LRAPA has no regulatory authority. LRAPA does not guarantee the accuracy of any information copied from EPA's TRI website.

    In 2023, this facility did not report any emissions to the TRI program. In order to report emissions to the TRI program, a facility must operate under a reportable NAICS code, meet a minimum employee threshold, and manufacture, process, or otherwise use chemicals in excess of the applicable reporting threshold for the chemical. This facility has not reported any emissions to the TRI program because they do not manufacture, process, or otherwise use chemicals in excess of the applicable reporting thresholds.

New Source Performance Standards (NSPSs)

23. 40 CFR part 60 subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE) would be applicable to the facility's diesel-fired engines because they were all manufactured after the 2007 applicability date for CI ICE. However, the facility's engines do not remain in one location for more than 12 consecutive months and are therefore considered non-road engines as defined in 40 CFR 1068.30. The permit contains a requirement that the facility certify annually that none of the engines in EU-Grinders, EU-Screens, EU-Conveyor, and EU-ADS remained in one location for more than 12 consecutive months and a statement that the facility must apply for a permit modification if the engines ever remain in one location for more than 12 consecutive months.

24. 40 CFR part 60 subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines would be applicable to the facility's propane-fired dryer because it was manufactured after the 2007 applicability date for CI ICE. However, the propane-fired dryer does not contain an engine and is therefore not subject to those standards.

National Emission Standards for Hazardous Air Pollutants (NESHAPs)

25. 40 CFR part 63 subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines is not applicable to any of the engines because they were manufactured after 2007 and do not remain in one location for more than 12 consecutive months and are therefore considered non-road engines as defined in 40 CFR 1068.30. The permit contains a requirement that the facility certify annually that none of the engines on the grinders remained in one location for more than 12 consecutive months and a statement that the facility must apply for a permit modification if the engines ever remain in one location for more than 12 consecutive months.

Recordkeeping Requirements

26. The facility is required to keep and maintain a record of the following information for a period of at least five (5) years.

| Parameter | Units | Minimum Recording Frequency |
|---|---|---|
| Maintenance of Baghouse #1 on Bagger | NA | Each Occurrence |
| Maintenance of Water Spray System on each Grinder | NA | Each Occurrence |
| Hours of Operation, Fuel Type and Fuel Quantity Used in each diesel-fired Grinder, Screen, Air Density Separator (ADS), and Conveyor | Hours & Gallons | Monthly |
| Hours of Operation, Fuel Type and Fuel Quantity Used in the Dryer | Hours & Gallons or Pounds | Monthly |
| Tons of Biomass and Soils* Stored in Piles | Bone Dry Tons (BDT) | Monthly |
| Tons of Rock Material* Stored in Piles | Tons | Monthly |
| Statement of Certification in Accordance with Condition 20 | NA | Annually |
| Log each complaint from the public and the resolution | NA | Upon receipt |
| Visible Emission Survey | % Opacity | Quarterly |
| Operation and Maintenance Plan | NA | Maintain the current version on-site |
| Upset log of all planned and unplanned excess emissions (See Condition G13) | NA | Per occurrence |

*See emission detail sheets in review report for the various products included.

Reporting Requirements

27. An annual summary must be submitted for the information in permit Condition 22, and General Condition G15. ***The report must be submitted by March 15 of each year***.

28. The facility is not subject to greenhouse gas reporting under OAR 340 Division 215 because actual greenhouse gas emissions are less than 2,500 metric tons (2,756 short tons) of $CO_2$ equivalents per year. If the source ever emits more than this amount, they will be required to report greenhouse gas emissions.

Public Notice

29. The proposed permit and review report were on public notice from February 26, 2026 to April 2, 2026. During the public comment period, two (2) comments were received from the public.

**Public Comment Summary and LRAPA Responses**

[All public comments that were received for this project are a public record and are retained with the public permit review files. For purposes of this summary document, the public comments may have been edited to reduce length or consolidated with similar comments. Public comments that are not related to the review report or draft permit, such as those comments that are statements of fact or express an opinion, are not presented in this document, and do not require a response from LRAPA.]

***Comment 1:*** *The commenter thanked LRAPA for the information but expressed astonishment at the types of emissions emitted to the air, soil, and water.*

**Response1:** LRAPA appreciates the commenters' concern for good air quality. LRAPA is obligated to issue air permits to facilities that meet all applicable air regulations.

***Comment 2a:*** *The commenter expressed appreciation for the opportunity to participate in the public review process and had several comments and concerns starting with the determination that the source is not a major source of air pollution for HAPs. Specifically, the commenter referred to Table 2 in the Public Notice that listed methanol and formaldehyde and asked for clarification regarding the methodology used to calculate the PTE for HAPs, the use of worst-case operating scenarios in evaluating the PTE, whether enforceable permit conditions limit the PTE of HAPs, and whether operational changes or production increases could alter this classification during the permit term.*

**Response 2a:** LRAPA appreciates the comments. As indicated in the emission details included with the Review Report, emission factors (EFs) for HAPs from EPA were available and used for the EU-Dryer. HAPs EFs for other emission units were either not available or not representative of the facility operations. Permit Condition 8 limits the drying activities in EU-Dryer to no more than 2,000 BDT/year (bone dry tons per year), so the facility would need to apply for a permit modification to increase that limitation.

***Comment 2b:*** *The commenter stated that the public notice summarized the emission limits but did not describe any health risk assessment, cumulative impact evaluation, or screening analysis of potential exposure to nearby residents. Furthermore, the commenter listed several items that the risk assessment should provide including cancer and non-cancer risk assessment for methanol or PM2.5; consideration of sensitive receptors such as nearby residences, schools, or medically vulnerable populations; and, consultation with the Oregon Health Authority.*

**Response 2b:** The facility was not required to conduct a risk assessment or air dispersion modeling as part of the renewal. The renewal does not include any new construction or increases in existing production that would trigger the requirement for a criteria pollutant analysis. Additionally, as an existing facility and as described in Item #20 of the Review Report, the source is not required to conduct a health risk assessment for air toxics under the Cleaner Air Oregon program as part of the renewal.

***Comment 2c:*** *LRAPA received another comment that the public notice did not provide information regarding pollutant dispersion modeling and asked whether air dispersion modeling was performed as part of the renewal review; what meteorological data was relied upon to conduct modeling for the Coburg area; and stack parameters (height, exhaust velocity, temperature) used in any modeling;*

**Response 2c:** See LRAPA response to comment 2b above. The facility was not required to conduct a risk assessment or air dispersion modeling as part of the renewal.

***Comment 2d:*** *The commenter asked if the facility had any compliance violations during the prior permit term and whether actual emissions have increased or decreased since 2019.*

**Response 2d:** As indicated in Item 9 of the Review Report, there have been no LRAPA enforcement actions performed against this facility, including none during the prior permit term. As far as actual emissions levels are concerned, they have remained relatively constant since 2019. The following table includes the actual emissions of criteria pollutants since 2019 (the 2025 annual report is currently under review and total emissions are not yet available as of this writing):

| Annual Report Year: | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 |
|---|---|---|---|---|---|---|
| PM | 0.6 | 0.4 | 0.6 | 0.7 | 0.6 | 0.6 |
| CO | 4.7 | 3.6 | 5.0 | 5.4 | 4.6 | 4.6 |
| VOC | 0.9 | 0.6 | 1.0 | 1.1 | 0.9 | 0.9 |
| $NO_X$ | 20.5 | 15.8 | 22.0 | 23.6 | 20.0 | 20.0 |
| $SO_2$ | 2.7 | 2.1 | 2.6 | 2.8 | 2.5 | 2.5 |

There were no changes to the permit or review report as a result of the comments LRAPA received.

**Public Comment Receipt Log**

Written comments were received from:

| |
|---|
| Randi Hastings<br>randihastings@aol.com |
| Patrick Fiedler<br>pfiedler@comcast.net |

MH:
4/8/2026

Emission Details:

## PTE and PSEL

| Facility totals: | PTE | PSEL |
|---|---|---|
| | ton/yr | ton/yr |
| **NOx** | 0.3 | -- |
| **CO** | 0.1 | -- |
| **SOx** | -- | -- |
| **PM2.5** | 2.9 | 2.9 |
| **PM10** | 6.0 | 6.0 |
| **PM** | 12.7 | 13 |
| **VOC** | 4.4 | 4.4 |
| **GHG** | -- | NA |

PTE is the potential to emit
PSEL is the Plant Site Emission Limit

**Biomass Storage Pile Particulate**

| Pollutant | Throughput (BDT/yr) | Emission Factor (lb/ton) | Annual Emissions (tons/yr) |
|---|---|---|---|
| PM | 25,000 | 0.1 | 1.3 |
| PM10 | 25,000 | 0.047 | 0.6 |
| PM2.5 | 25,000 | 0.015 | 0.2 |

PM and PM10 emission factors from Kinsgford Title V Permit for Storage Pile (engineering estimate based upon EPA's AP42 for aggregate material storage)
PM2.5 fraction (0.15) from DEQ AQEF-08
Drop point estimates verified by Rexius
Calculations account for EU: Conveyor as a drop point

**Biomass Handling Particulate**

| | | | | | |
|---|---|---|---|---|---|
| Material Volume (tpy) | 25,000 | | | | |
| **Biomass Particulate** | | | | | |
| Drop Points (#) | 22 | | | | |
| | | EF (lb/ton) | Biomass Piles PM (lb/year) | Biomass Drop Pt PM (lb/year) | |
| | PM | 4.05E-05 | 1.0 | 22 | |
| | PM10 | 1.91E-05 | 0.5 | 11 | |
| | PM2.5 | 2.90E-06 | 0.1 | 2 | |
| | k (PM) | 0.74 | | | |
| | k (PM10) | 0.35 | | | |
| | | 0.053 | | | |
| | k (PM2.5) | 50 | Moisture content, typical hog fuel moisture content | | |
| | M | 7 | Wind speed - 30-year climate normal for Eugene airport: https://www.weather.gov/pqr/ClimateBookEugen | | |
| | u | | | | |

| Rock (bulk rock and gravel, loam, sand, cinder, pumice, decomposed granite - excludes paving stones, etc.) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Volume | 75,000 | | | | | | | | | | | | |
| Drop Points (#) | 7 | | | | | | | | | | | | |
| | | EF (lb/ton) | Rock Piles PM (lb/year) | Rock Drop Pts (lb/year) | | | | | | | | | |
| | PM | 1.59E-02 | 1196 | 8372 | | | | | | | | | |
| | PM10 | 7.54E-03 | 566 | 3960 | | | | | | | | | |
| | PM2.5 | 1.14E-03 | 86 | 600 | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | k (PM) | 0.74 | | | | | | | | | | | |
| | k (PM10) | 0.35 | | | | | | | | | | | |
| | k (PM2.5) | 0.053 | | | | | | | | | | | |
| | M | 0.7 | AP42 13.2.4, Mean Silt Content for crushed limestone | | | | | | | | | | |
| | u | 7 | Wind speed - 30-year climate normal for Eugene airport: https://www.weather.gov/pqr/ClimateBookEugene | | | | | | | | | | |
| | | | Drop point estimates verified by Rexius | | | | | | | | | | |
| | | **Piles** | **Handling** | | | | | | | | | | |
| **TOTAL** | | **Tons/year** | **Tons/year** | | | | | | | | | | |
| | **PM** | 1.8 | 4.2 | | | | | | | | | | |
| | **PM10** | 0.9 | 2.0 | | | | | | | | | | |
| | **PM2.5** | 0.2 | 0.3 | | | | | | | | | | |
| | **VOC** | 2.4 | -- | | | | | | | | | | |

| **Storage Pile VOC** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Emission factors from NCASI Technical Bulletin 723, Page 14: | | | | | | | | | |
| Hogged Fuel | 0.27 | lb C/dry ton | | | | | | | |
| Bark | 0.63 | lb C/dry ton | | | | | | | |
| Sawdust | 1.66 | lb C/dry ton | | | | | | | |
| Chips/garden compost | 0.72 | lb C/dry ton | | | | | | | |
| | | | | | | | **VOC as C** | | |
| Garden Compost | | 8000 | tons/yr | | 50% | Moisture | 2880 | | |
| Chips | | 80 | tons/yr | | 45% | Moisture | 31.68 | | |
| | | | | | | | | | |
| Hogged Fuel | | 2125 | tons/yr | | 50% | Moisture | 286.875 | | |
| | | 500 | tons/yr | | 40% | Moisture | 81 | | |
| | | | | | | | | | |
| Sawdust | | 100 | tons/yr | | 45% | Moisture | 91.3 | | |
| | | | | | | | | | |
| Bark | | 1500 | tons/yr | | 45% | Moisture | 519.75 | | |
| | | 12305 | tons/yr | Total | | lb/yr | 3890.605 | 1.9 | ton/yr |
| A rough conversion for VOC as C to Actual VOC is 1.22*(VOC as C): Actual VOC: | | | | | | | | 2.4 | ton/yr |

| **Grinding Emissions** | | | | | |
|---|---|---|---|---|---|
| Total annual material throughput (tons/yr) = | | | 250,000 | | |
| | Emission Factor | Total Annual Emissions | | | |
| Pollutant | (lb/ton log) | (tons/yr) | | | |
| PM | 0.024 | 3.00 | | | |
| PM10 | 0.012 | 1.50 | | | |
| PM2.5 | 0.0060 | 0.75 | | | |
| | | | | | |
| Represents fugitive emissions from grinding wood/bark. | | | | | |
| Emission factor from EPA Region 10 Particulate Matter Potential to Emit Emission Factors for Activities at Sawmills, | | | | | |
| Excluding Boilers, Located in Pacific Northwest Indian Country (May 2014) for log debarking, based on guidance from | | | | | |
| Bay Area Air Quality Management District Permit Handbook for Tub Grinders. Assumes that emissions from log | | | | | |
| debarking are similar and representative of emissions from wood grinding. | | | | | |
| Capacity emissions were not attempted to be estimated for grinding | | | | | |

| **Screening and Air Density Separator (ADS aka "Fan") Emissions** | | |
|---|---|---|
| Total annual material throughput (tons/yr) = | 250,000 | |
| | Emission Factor | Total Annual Emissions |
| Pollutant | (lb/ton ) | (tons/yr) |
| PM | 0.025 | 3.13 |
| PM10 | 0.0087 | 1.09 |
| PM2.5 | 0.0087 | 1.09 |
| | | |
| Represents fugitive emissions from screening wood/bark and for the air density separtors used to remove plastic from soil and biomass. | | |
| Emission factor from EPA AP42 Table 11.19.2-2 for Screening | | |
| Assume for estimation purposes that crushed stone screening is and representative of emissions from wood screening. | | |
| Capacity emissions were not attempted to be estimated for screening | | |

| **Drying Emissions:** | | |
|---|---|---|
| Assume : | 2000 | BDT/yr |
| | Emission Factor | Annual Emissions |
| Pollutant | lb/ODT | ton/yr |
| NOx | 0.31 | 0.31 |
| CO | 0.12 | 0.12 |
| SOx | -- | -- |
| PM/PM10/PM2.5 | 0.54 | 0.54 |
| VOC | 2.00 | 2.00 |
| Formaldehyde | 0.0086 | 0.009 |
| Methanol | 0.073 | 0.07 |
| | | |
| Emission factors are from AP-42 Table 10.6.2-1, 2 and 3 for a rotary dryer,direct natural gas-fired, softwood, uncontrolled | | |
| These represent the best available factors for the specialty products dryer at Rexius. | | |
| Assume all PM = PM2.5 | | |

| **Baghouse Emissions:** | | |
|---|---|---|
| | | |
| Baghouse #1 collects: | 1.56 | BDT/year |
| Tons to baghouse: | 1.56 | BDT/year |
| Tons to atomosphere: | 0.0015616 | ton/yr |
| Baghouse estimated to be 99.9% efficient | | |
| Bagger building baghouse installed in 2013 | | |
| Assume all PM = PM2.5 | | |

## References


| | |
|---|---|
| | EPA AP-42 13.2.4 Aggregate Handling and Storage Piles for PM, PM10, PM2.5 |
| | PM2.5 fraction (0.15) from DEQ AQEF-08 |
| | VOC emission factor for biomass types are from NCASI Tech Bull. 723 Pg 14, converted from as-carbon to as-VOC (x1.22) |
| | Bark includes bark, mulch, wood shavings, wood chips and wood nuggets |
| | Soils includes planting soils, composts, and potting mixes |
| | Rock includes loam, river sand, rock, concrete mix, cinder, pumice, sand, cobblestone, and granite |
| | Capacity emissions were not attempted to be estimated for storage piles |