SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Staff Report

Proposed Amended Rule 1133 Series – Composting, Chipping and Grinding, and Related Operations

Proposed Amended Rule 1133 – Emission Reductions from Direct Land Application
Proposed Amended Rule 1133.1 – Chipping and Grinding Operations
Proposed Amended Rule 1133.2 – Emission Reductions from Co-composting Operations
Proposed Amended Rule 1133.3 – Emission Reductions from Composting Operations

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EXECUTIVE SUMMARY

Rule 1133 Series – Composting, Chipping and Grinding, and Related Operations (Rule 1133 Series) comprises four rules: Rule 1133 – Composting and Related Operations – General Administrative Requirements (Rule 1133), Rule 1133.1 – Chipping and Grinding Activities (Rule 1133.1), Rule 1133.2 – Emission Reductions from Co-composting Operations (Rule 1133.2), and Rule 1133.3 – Emission Reductions from Greenwaste Composting Operations (Rule 1133.3). Rule 1133 Series reduces volatile organic compound (VOC) and ammonia (NH3) emissions from composting, reduces inadvertent decomposition from chipping and grinding activity, and gathers information regarding the compostable waste industry. Rule 1133 Series applies to chipping and grinding operations, operations that compost biosolids and manure, referred to as co-composting, and operations that compost greenwaste, foodwaste, and other compostable waste. Proposed Amended Rule (PAR) 1133 Series affects approximately 98 facilities within the South Coast AQMD and reduces emissions from the direct land application of uncomposted greenwaste and from legacy co-composting, calculated to be the source of 3.65 tons of VOC emissions per day and 0.45 ton of ammonia emissions per day.

Proposed amendments to each of the four rules are needed to implement Best Control Measure-10 (BCM-10) from the South Coast Air Basin Attainment Plan for the 2012 Annual PM2.5 Standard (PM2.5 Plan) to further reduce VOC and ammonia emissions, precursors for the air contaminant fine particulate matter (PM2.5) via atmospheric reactions with oxides of nitrogen (NOx) to form ammonium nitrate. Proposed Amended Rule 1133 – Emission Reductions from Direct Land Application (PAR 1133) establishes restrictions and prohibitions on suppliers of uncomposted greenwaste for direct land application unless uncomposted greenwaste is applied in a manner to minimize VOC and ammonia emissions. Proposed Amended Rule 1133.2 – Emission Reductions from Co-composting Operations (PAR 1133.2) further reduces VOC and ammonia emissions by requiring legacy co-composters, one smaller co-composting facility in operation at the time of original rule adoption in 2003, to use best management practices when composting. Proposed Amended Rule 1133.1 – Chipping and Grinding Operations (PAR 1133.1), PAR 1133.2, and Proposed Amended Rule 1133.3 – Emission Reductions from Composting Operations (PAR 1133.3) contain the information gathering elements formerly located within Rule 1133 to enable PAR 1133 to implement BCM-10. PAR 1133 Series applies to a combined 98 facilities subject to PAR 1133.1, PAR 1133.2, or PAR 1133.3. Of these 98 facilities, PAR 1133 would apply to 86 facilities that transport uncomposted greenwaste offsite. The control strategies are expected to reduce VOC emissions by 2.34 tons per day and reduce ammonia emissions by 0.19 ton per day. The total cost of the control strategies is expected to be $195,100 per year to implement. The overall cost-effectiveness of PAR 1133 Series is estimated to be $230 per ton of VOC reduced and $2,900 per ton of ammonia reduced.

Development of PAR 1133 Series was conducted through a public process. Three Working Group meetings were held on January 30, 2025, May 7, 2025, and June 5, 2025, respectively. The Working Group is composed of representatives from businesses, environmental groups, public agencies, and consultants. A Public Workshop was held on July 9, 2025, where the proposed amended rule language was presented to the general public and stakeholders to solicit comments. Staff also conducted multiple site visits as part of this rulemaking process.

CHAPTER 1: BACKGROUND

INTRODUCTION

Rule 1133 Series – Composting, Chipping and Grinding, and Related Operations (Rule 1133 Series) is a collection of four rules: Rule 1133 – Composting and Related Operations – General Administrative Requirements (Rule 1133), Rule 1133.1 – Chipping and Grinding Activities (Rule 1133.1), Rule 1133.2 – Emission Reductions from Co-composting Operations (Rule 1133.2), and Rule 1133.3 – Emission Reductions from Greenwaste Composting Operations (Rule 1133.3), to reduce volatile organic compound (VOC) and ammonia (NH3) emissions from composting, to reduce inadvertent decomposition from chipping and grinding activity, and to gather information regarding the compostable waste industry. Rule 1133 Series applies to chipping and grinding operations, operations that compost biosolids and manure, referred to as co-composting, and operations that compost greenwaste, foodwaste, and other compostable waste. Proposed amendments to each of the four rules are needed to implement Best Control Measure-10 (BCM-10) from the South Coast Air Basin Attainment Plan for the 2012 Annual PM2.5 Standard (PM2.5 Plan) to further reduce VOC and ammonia emissions, precursors for the air contaminant fine particulate (PM2.5) via atmospheric reactions with oxides of nitrogen (NOx) to form ammonium nitrate.

Proposed Amended Rule 1133 – Emission Reductions from Direct Land Application (PAR 1133) repurposes existing Rule 1133, the information-gathering rule for the compostable waste industry. PAR 1133 establishes restrictions and prohibitions on suppliers of uncomposted greenwaste for direct land application unless uncomposted greenwaste is applied in a manner to minimize VOC and ammonia emissions.

Proposed Amended Rule 1133.1 – Chipping and Grinding Operations (PAR 1133.1) applies to chipping and grinding operations and is meant to reduce inadvertent decomposition of materials not destined for use onsite. PAR 1133.1 more closely aligns rule language with statewide greenwaste handling rules, improving clarity and consistency.

Proposed Amended Rule 1133.2 – Emission Reductions from Co-composting Operations (PAR 1133.2) applies to operations that compost any amount of biosolids, the solid waste residue produced after digestion of sewage sludge at wastewater plants, or more than 20% manure by volume. PAR 1133.2 further reduces VOC and ammonia emissions by requiring legacy co-composters to use best management practices when composting. PAR 1133.2 also reduces exemption thresholds to reduce potential VOC and ammonia emissions.

Proposed Amended Rule 1133.3 – Emission Reductions from Composting Operations (PAR 1133.3) applies to all other composting operations that are not regulated by PAR 1133.2. PAR 1133.3 updates rule language for clarity and consistency with the other rules in the series. Lastly, the information gathering component of existing Rule 1133 is now located in PAR 1133.1, PAR 1133.2, and PAR 1133.3, respectively.

PROCESS DESCRIPTIONS

The compostable waste industry is a complex web of multiple media and differing pathways. Specific definitions for terms will be more closely described in Chapter 3 – Summary of Proposals. The wastes or byproducts of processing of wastes created by living beings such as plants, animals, and humans are utilized by the compostable waste industry to manufacture a variety of products for residential gardening, public landscaping, agricultural production, or other beneficial uses using mechanical equipment to produce directly or to assist biological processes via naturally-

occurring bacteria, archaea, and other organisms. The feedstocks for compost include greenwaste, woodwaste, foodwaste, biosolids, digestate, and manure.

Figure 1-1 – Greenwaste

Figure 1-2 – Woodwaste

Figure 1-3 – Foodwaste

Figure 1-4 – Biosolids

Figure 1-5 – Digestate

Figure 1-6 – Manure

The compostable waste industry is linked with fine particulate matter, or PM2.5, emissions. PM2.5 may be emitted directly or PM2.5 precursors may be emitted from a variety of processes, interacting in the atmosphere to produce PM2.5. NOx and ammonia are significant precursors for PM2.5, through the formation of ammonium nitrate. Ammonium nitrate is believed to contribute 20% to 35% of total PM2.5 in the region, varying by season and location.

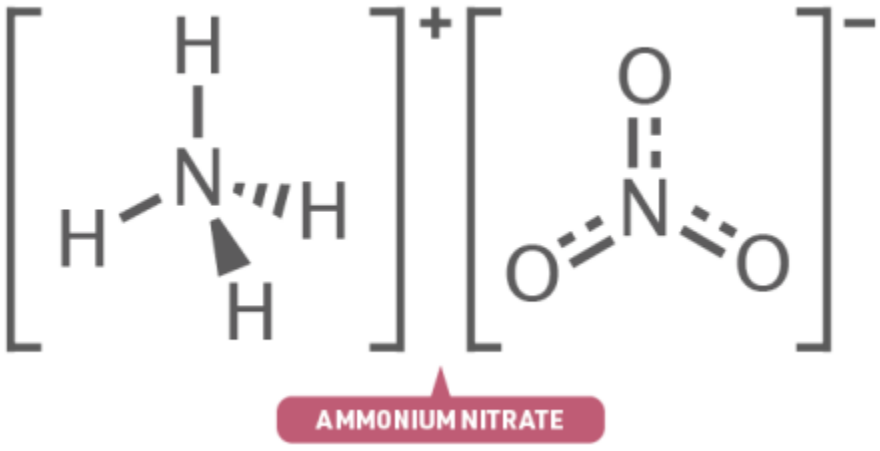


Figure 1-7 – Ammonium Nitrate

CHIPPING AND GRINDING

Chipping and grinding mechanically reduces the size of material using equipment like wood chippers, tub grinders, or horizontal grinders to increase surface area, to improve uniformity, and to increase usability. Chipping and grinding is often followed by and separate from screening and conveying to produce material to size specification and to remove stones. Screening and conveying may include magnets, suction, and water to remove metal and other contaminants. Greenwaste, woodwaste, and foodwaste are often chipped and ground, sometimes multiple times, to produce end products like wood chip for land covering, uncomposted greenwaste as a soil amendment for direct land application, or feedstock for composting. Prior to and after chipping and grinding, materials are stockpiled onsite. PM emissions are directly associated with chipping and grinding operations, and VOC and ammonia emissions are associated with stockpiling, both before and after the material is processed.

COMPOSTING

Composting is the aerobic decomposition of organic, carbon-based wastes and other feedstocks to produce a biologically-stable nutrient-rich soil amendment and usable byproducts. Common feedstocks for composting include: chipped and ground greenwaste; chipped and ground woodwaste and associated byproduct sawdust; and chipped and ground foodwaste. Composting feedstocks typically not requiring chipping and grinding include: biosolids, the solid byproduct of digestion of sewage; digestate, the solid byproduct of digestion of waste other than sewage; and manure, the waste and soiled bedding from animal keeping.

Under favorable biological conditions with consideration for temperature, moisture, oxygen levels, and pile shape, naturally-occurring bacteria, archaea, and other organisms consume the wastes and its byproducts for energy and reproduction. The elevated temperatures of composting also reduce pathogens like *E. coli* and other coliform bacteria and destroy weed seeds. Some specialized organisms consume VOC and ammonia as energy sources, such as the nitrifying bacteria *Nitrosomonas*. Composting may be divided into the active phase, when readily available energy sources are rapidly consumed under higher temperatures usually lasting a few days or weeks depending on oxygen supply and other factors, and the curing phase, a slower process typically lasting weeks or months. After composting, the product is screened to remove compost overs, a woody material byproduct, from finished compost, a humus-like material used as a soil amendment.

Composters may also produce a variety of land cover products that have completed some or all of the composting process. A medium-sized woody material may be produced from the product of active and curing phases of composting, sized larger than fine finished compost and smaller than coarse compost overs. Composters may also perform only the active phase of composting on uncomposted greenwaste to reduce pathogens and weeds in the product. Both of these products are often referred to as mulch. Mulch in common usage may also refer to uncomposted lawn clippings reapplied to lawns. Because the term “mulch” in common usage can refer to uncomposted, partially composted, or fully composted material, the term is not used in PAR 1133 Series rule language to avoid confusion. While screening and conveying are associated with the composting process, the feedstocks of composting must be moist to produce favorable biological conditions and are considered de minimus sources of PM emissions. Composting and stockpiling prior to composting are associated with VOC and ammonia emissions.

DIRECT LAND APPLICATION

Direct land application is the application of waste, byproducts, or finished products to raw land to protect soil or to add nutrients. Direct land application, as opposed to composting, is not under favorable biological conditions. For example, the only source of moisture is expected to be rain as opposed to composting's careful moisture management. As a result, biological processes that reduce emissions, such as nitrifying bacteria *Nitrosomonas*, are not expected to be active. Thus, decomposition of direct land applied materials, such as uncomposted greenwaste, is expected to result in more VOC and ammonia emissions than composting.

OTHER USES OF ORGANIC WASTE MATERIALS

Chipping and grinding, composting, and direct land application are not the only processes associated with the compostable waste industry. Chipped and ground greenwaste or foodwaste may be sent for anaerobic digestion with the resulting collected biogas used for energy or heat production. Woodwaste may be used as a fuel at biomass-fired power plants. Greenwaste, woodwaste, foodwaste, along with other solid wastes, are often burned at waste incinerators which also produce electricity.

REGULATORY BACKGROUND

The following is a summary of the air quality programs that affect the compostable waste industry.

FEDERAL CLEAN AIR ACT REQUIREMENTS

The federal Clean Air Act (CAA) obligates the United State Environmental Protection Agency (U.S. EPA) to set National Ambient Air Quality Standards (NAAQS) for air pollutants. Six air pollutants commonly found in ambient air are known as "criteria air pollutants", specifically: 1) ozone; 2) particulate matter (PM); 3) carbon monoxide; 4) lead; 5) sulfur dioxide; and 6) nitrogen dioxide. PM is further subdivided by the size of the particulate matter: PM10 for particulate matter smaller than 10 µm (micrometer) in diameter and PM2.5, known as fine particulates, for particulate matter smaller than 2.5 µm in diameter. There are three NAAQS for PM based on size and averaging time: 1) 24-hour PM10 standard; 2) 24-hour PM2.5 standard; and 3) annual PM2.5 standard.

In 2012, U.S. EPA lowered the primary annual NAAQS for PM2.5 to 12.0 micrograms per cubic meter (µg/m3).[1] Under the CAA, there are two tiers of nonattainment for areas that fail to meet PM2.5 standards; "moderate" and "serious." Nonattainment areas are classified by the U.S. EPA into one of these two tiers based on the levels of PM2.5 in the region. Effective April 15, 2015, the U.S. EPA designated the South Coast Air Basin (Basin) as a "moderate" nonattainment area for the 2012 annual PM2.5 NAAQS.[2] In the 2016 Air Quality Management Plan (AQMP), South Coast AQMD requested reclassification of the Basin to "serious" nonattainment for the 2012 annual PM2.5 standard as provided in the CAA. The 2016 AQMP was adopted by the South Coast AQMD Governing Board on March 3, 2017, and submitted to U.S. EPA for approval on April 27, 2017, via the California Air Resources Board (CARB). On December 9, 2020, U.S. EPA reclassified the Basin from "moderate" to "serious" nonattainment for the 2012 annual PM2.5

[1] National Ambient Air Quality Standards for Particulate Matter, 78 Fed. Reg. 3086 (January 15, 2013)

[2] Air Quality Designations for the 2012 Primary Annual Fine Particle (PM2.5) National Ambient Air Quality Standards (NAAQS), 80 Fed. Reg. 2206 (Jan. 15, 2015)

NAAQS per South Coast AQMD's previous request, establishing an attainment deadline of December 31, 2025.[3]

SOUTH COAST AIR BASIN ATTAINMENT PLAN FOR THE 2012 ANNUAL PM2.5 STANDARD (PM2.5 PLAN)

To achieve attainment with the 2012 annual PM2.5 NAAQS, South Coast AQMD prepared the PM2.5 Plan,[4] adopted by the South Coast AQMD Governing Board on June 7, 2024. Included in the PM2.5 Plan is a request for a 5-year extension to demonstrate attainment of the standard by December 31, 2030. Under CAA Section 188(e), areas classified as serious nonattainment seeking an extension of the attainment date are required to demonstrate that the attainment plan includes Most Stringent Measures (MSMs). Title 40 of the Code of Federal Regulations, Section 51.1000 (Subpart Z) states in pertinent part:

> *Most stringent measure (MSM) is any permanent and enforceable control measure that achieves the most stringent emissions reductions in direct PM2.5 emissions and/or emissions of PM2.5 plan precursors from among those control measures which are either included in the SIP for any other NAAQS, or have been achieved in practice in any state, and that can feasibly be implemented in the relevant PM2.5 NAAQS nonattainment area.*

BCM-10 – Emission Reductions from Direct Land Application of Chipped and Ground Uncomposted Greenwaste is identified as MSM and states:

> *This control measure seeks reductions in NH3 emissions from direct land application (DLA) of chipped and ground uncomposted greenwaste to agricultural land, public land for erosion control or roadway management, and consumers' properties for gardening or landscaping purposes. This control measure proposes to require composting of chipped and ground greenwaste, in accordance with the Best Management Practices (BMP) requirements of Rule 1133.3, prior to DLA.*

A second control measure listed in the PM2.5 Plan for the compostable waste source category is BCM-11 – Emission Reductions from Organic Waste Composting. However, BCM-11 is not identified as MSM. The PM2.5 Plan states regarding BCM-11:

> *This control measure seeks emission reductions of NH3 from the processing of organic waste materials including foodwaste, greenwaste, and agricultural waste. Control approaches include foodwaste co-digestion and integration of anaerobic digestion (AD) with composting. If foodwaste is the only feedstock input to AD, the resulting digestate could be included into greenwaste composting where emission control is governed by Rule 1133.3. This control measure proposes to expand the applicability of Rules 1133.2 and 1133.3 to regulate the co-digestion of foodwaste with biosolids and the integration of foodwaste digestate with greenwaste composting for further emission reductions. An integrated AD-composting system will result in less overall waste and a more useful product.*

[3] Approval and Promulgation of Implementation Plans; Designation of Areas for Air Quality Planning Purposes; California; South Coast Moderate Area Plan and Reclassification as Serious Nonattainment for the 2012 PM2.5 NAAQS, 85 Fed. Reg. 71264 (November 9, 2020)

[4] https://www.aqmd.gov/home/air-quality/air-quality-management-plans/other-state-implementation-plan-(sip)-revisions/2012-annual-pm2-5-plan

PAR 1133 Series incorporates BCM-10 as MSM via amendments to Rule 1133. As BCM-11 is not an MSM and requires more study to assess impacts, it is not included in this rulemaking.

RULE HISTORY

Elements of Rule 1133 Series were originally adopted in 2003 and subsequent rulemaking occurred in 2011:

2003 ADOPTION OF RULE 1133, RULE 1133.1, AND RULE 1133.2

In 2003, adoption of Rule 1133, Rule 1133.1, and Rule 1133.2 occurred,[5] partially implementing Control Measure WST-02 – Emission Reductions from Composting, which were included in the 1994 and 1997 AQMPs as well as in the 1999 amendment to the 1997 Ozone State Implementation Plan for the South Coast Air Basin. The control measure called for the development of an emissions inventory as well as identification of technically and economically feasible control options for composting operations.

Rule 1133 required composting and chipping and grinding facilities to register with South Coast AQMD, to pay a fee, and to provide their facility and throughput information along with annual updates of their throughput.

Rule 1133.1 established holding or processing time requirements for chipping and grinding activities in order to prevent inadvertent decomposition associated with stockpiling waste for extended periods of time.

Rule 1133.2 required new co-composting operations to enclose their active composting operations and to use forced-air aeration systems for their curing part of the operation to control 80% of their VOC and ammonia emissions. Rule 1133.2 also required existing co-composting operations to control 70% of their VOC and ammonia emissions.

2011 ADOPTION OF RULE 1133.3 AND AMENDMENT OF RULE 1133.1

In 2011, the South Coast AQMD Governing Board adopted Rule 1133.3 to implement Control Measure MCS-04 in the 2007 AQMP and amended Rule 1133.1 for consistency with statewide requirements for chipped and ground greenwaste.[6]

Rule 1133.3 established Best Management Practices (BMPs) for greenwaste composting operations for previously uncontrolled composting by requiring active phase compost piles be covered with at least six (6) inches of finished compost or compost overs within 24 hours of initial pile formation and requiring active phase compost piles be sufficiently wet prior to turning.

Rule 1133.1 amended the rule with a maximum holding time requirement of 48 hours or up to seven (7) days with Local Enforcement Agency (LEA) approval to conform to statewide requirements in the California Code of Regulations, Title 14, Division 7, Chapter 3.1.

FEDERAL PROGRAMS

Sewage Sludge Disposal Standards

U.S. EPA promulgated standards for the use or disposal of sewage sludge in Title 40, Chapter I, Subchapter O, Part 503 of the Code of Federal Regulations (40 CFR Part 503).[7] 40 CFR Part 503

[5] http://www3.aqmd.gov/hb/2003/January/030131a.html
[6] https://www.aqmd.gov/docs/default-source/agendas/governing-board/2011/2011-jul8-037.pdf
[7] https://www.epa.gov/biosolids/sewage-sludge-laws-and-regulations

contains requirements for the control of pathogens, vectors, and heavy metal for sludge composting operations. To qualify as Class A compost, Appendix B to Part 503 – Pathogen Treatment Process, generally requires processes to further reduce pathogens (PFRP). PFRP requires that open windrow composting maintain the temperature of the compost at 131 degrees Fahrenheit or higher for 15 days or longer, and during this time there must be a minimum of five (5) turnings of the windrows. For in-vessel or aerated static pile (ASP) composting, the PFRP requires the active pile temperature be at least 131 degrees Fahrenheit or higher for three (3) days. This process ensures that virtually all human pests and pathogens are destroyed. Since food residuals contain human pathogens, fungi, and bacteria, this PFRP should be conducted when foodwaste is being mixed with greenwaste for composting.

STATE PROGRAMS

California Department of Resources Recycling and Recovery (CalRecycle)

CalRecycle oversees the state's waste management, recycling, and waste reduction programs, including organic materials management such as chipping and grinding operations and composting operations. CalRecycle develops statewide rules, including by emergency pathways, for these programs and, in the case of organic materials, assists in enforcement at the local level with training and support.

California Senate Bill (SB) 1383

In 2016, the state of California approved Senate Bill (SB) 1383 directing CalRecycle to implement a short-lived climate pollutant reduction strategy for methane emissions including compostable waste.[8] SB 1383 set targets to reduce compostable waste such as greenwaste and foodwaste sent to landfills by 75% by 2025. SB 1383 and CalRecycle rule changes, such as the loss of diversion credit for greenwaste as alternative daily cover at disposal sites, have resulted in a significant increase of greenwaste, woodwaste, and foodwaste diverted away from disposal at landfills and towards chipping and grinding operations and composting operations.

Illegal Disposal Emergency Regulations

In 2025, in response to widespread illegal dumping and disposal of compostable waste and comingled waste in the Antelope Valley area of Los Angeles County, CalRecycle adopted emergency regulations that defined land application activities and placed these activities within CalRecycle's regulations including operator filing requirements, state minimum standards, recordkeeping, and LEA inspection requirements.[9] The emergency regulations were to ensure that land application of compostable material or digestate are appropriately regulated to ensure protection of public health and safety and the environment. The emergency regulations require testing of material prior to land application, limit land application of compostable material to six (6) inches in depth, capping farms at three (3) applications per year while all others at just once per year, and restrict more material from being added until existing material is tilled or incorporated into soil.

[8] https://calrecycle.ca.gov/organics/slcp/
[9] https://calrecycle.ca.gov/laws/rulemaking/illegaldisposal/

LOCAL PROGRAMS

In addition to South Coast AQMD regarding air quality issues, several other local programs exert significant control over chipping and grinding operations and composting operations with foci including solid waste issues, stormwater runoff, and land use.

Local Enforcement Agency (LEA)

Within the South Coast AQMD's jurisdiction, at least eight different Local Enforcement Agencies (LEAs) operate to ensure compliance with CalRecycle's statewide waste management program.[10] LEAs have the primary responsibility for ensuring the correct operation and closure of solid waste facilities, including chipping and grinding operations and composting operations, in California. LEAs are typically programs within departments of city or county government, such as public health or building and safety. LEAs may also be special districts.

LEAs investigate complaints, receive and process notification, registrations, and permits for solid waste operations, including chipping and grinding and composting, and conduct periodic inspections of facilities. These activities of the various LEAs are reported to CalRecycle and maintained in a statewide database known the Soild Waste Information System or SWIS.[11] The types of solid waste activities found in this database include locations of Rule 1133 Series activity such as landfills, transfer stations, composting sites, and in-vessel digestion sites. For each site, the database contains information about the location, landowner, operator, activity type, regulatory and operational status, authorized waste types, LEA, inspections, and enforcement action records.

AFFECTED FACILITIES

PAR 1133 Series affects approximately 98 facilities within the South Coast AQMD based on a review of South Coast AQMD Permits to Operate, inspection reports, and Annual Emissions Reporting (AER) data, as well as the CalRecycle SWIS database. Using these tools, 43 facilities were detected that exclusively perform chipping and grinding subject to PAR 1133.1. A total of four facilities are considered co-composting operations and PAR 1133.2 applies. Lastly, 51 facilities perform composting subject to PAR 1133.3.

PUBLIC PROCESS

Development of PAR 1133 Series was conducted through a public process. Three Working Group meetings were held on January 30, 2025, May 7, 2025, and June 5, 2025, respectively. The Working Group is composed of representatives from businesses, environmental groups, public agencies, and consultants. The purpose of the Working Group meetings is to discuss proposed concepts and work through the details of South Coast AQMD's proposal. Additionally, a Public Workshop was held on July 9, 2025. The purpose of the Public Workshop is to present the proposed amended rule language to the general public and stakeholders, and to solicit comments. Staff also conducted multiple site visits as part of this rulemaking process.

[10] https://www2.calrecycle.ca.gov/SolidWaste/LEA/Directory/
[11] https://www2.calrecycle.ca.gov/SolidWaste/Site/Search

CHAPTER 2: BARCT ASSESSMENT

INTRODUCTION

PAR 1133 Series rule development was initiated in response to implement BCM-10 in the PM2.5 Plan. Additionally, South Coast AQMD periodically assesses rules to ensure that Best Available Retrofit Control Technology (BARCT) is reflected in rule requirements. To implement BCM-10 and ensure that Rule 1133 Series reflects BARCT, a BARCT assessment was conducted to identify the potential to further reduce emissions.

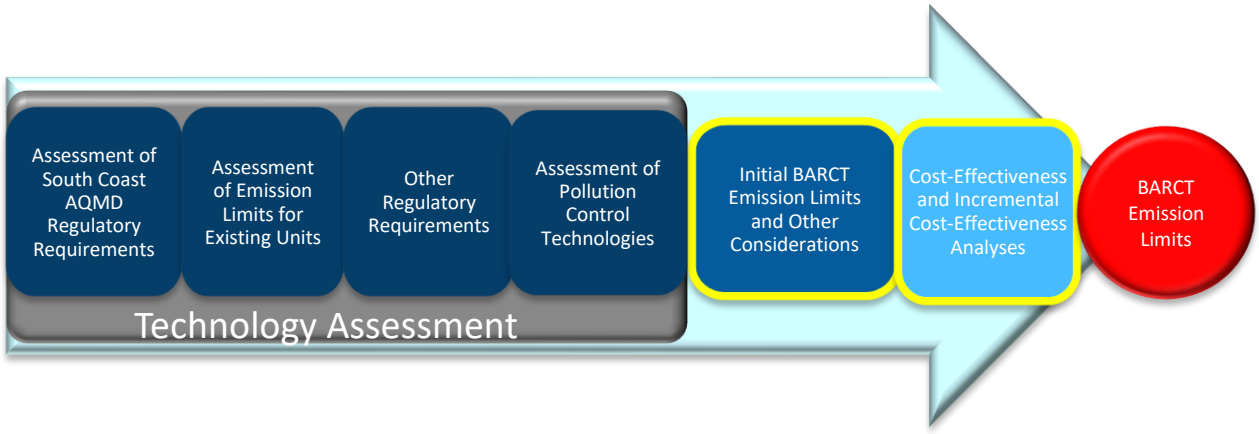
BARCT is defined in the Health & Safety Code Section 40406 as "an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source." Consistent with state law, BARCT emission limits take into consideration environmental impacts, energy impacts, and economic impacts. The BARCT analysis approach follows a series of steps conducted for each equipment category.

BARCT ANALYSIS APPROACH

The BARCT analysis approach follows a series of steps conducted for each operation type within PAR 1133 Series, specifically chipping and grinding operations subject to PAR 1133.1, co-composting operations subject to PAR 1133.2, and composting operations subject to PAR 1133.3. PAR 1133 regarding supply of uncomposted greenwaste, applies to all three types of operations.

The steps for BARCT analysis include:

- Assessment of South Coast AQMD Regulatory Requirements
- Assessment of Emissions Limits for Existing Units
- Other Regulatory Requirements
- Assessment of Pollution Control Technologies
- Initial BARCT Emission Limits and Other Considerations
- Cost-Effectiveness and Incremental Cost-Effectiveness Analyses
- BARCT Emission Limit



The BARCT assessment included a review of technologies and emission reduction strategies. As part of the technology assessment, a cost-effectiveness analysis was conducted for technologies with potential to reduce emissions. A cost-effectiveness analysis determines the cost per ton of pollutant reduced. In the 2022 AQMP, a cost-effectiveness threshold of $36,000 per ton of VOC reduced was established. After adjusting for inflation, the cost-effectiveness threshold is $41,400

per ton of VOC reduced (2024 U.S. Dollars). An incremental cost-effectiveness analysis was also conducted for proposed controls and monitoring methods to establish BARCT, if applicable, and is discussed in Chapter 4. At the present time, the South Coast AQMD Governing Board has not established a cost-effectiveness threshold for PM2.5 or PM2.5 precursor ammonia.

ASSESSMENT OF SOUTH COAST AQMD REGULATORY REQUIREMENTS

As part of the BARCT assessment, staff reviewed existing South Coast AQMD regulatory requirements that affect VOC and ammonia emissions for chipping and grinding operations, co-composting operations, and composting operations subject to the Rule 1133 Series. Chipping and grinding operations, subject to Rule 1133.1, must chip and grind greenwaste and utilize on-site or remove from the site within 48 hours of receipt, excluding official federal and state holidays, or up to 7 days maximum, with approval from the LEA. Co-composting operations, subject to Rule 1133.2, must conduct the active phase of composting of their various feedstocks including biosolids and manure within an enclosure and must conduct the curing phase of composting using an aeration system, vented to controls with equal to or greater than 80% control efficiency for VOC and ammonia, respectively. Composting operations, subject to Rule 1133.3, must use best management practices for their composting. If composting large amounts of foodwaste, an aeration system is required, venting to controls with equal to or greater than 80% control efficiency for VOC and ammonia, respectively.

ASSESSMENT OF EMISSION LIMITS FOR EXISTING UNITS

Staff examined the current requirements of air quality permits for facilities subject to the Rule 1133 Series, including permits to operate for chipping and grinding equipment, permits to operate for enclosures, aeration systems, and associated biofilters for co-composting operations, and aeration systems and associated biofilters for composting operations. Staff assessed the emission limits and practices of those existing units and determined that the emission limits of 80% control of VOC and ammonia emissions as well as best management practices were consistent with the emission limits and practices expressed in the existing Rule 1133 Series. Staff did not detect any required practices or emission limits more stringent than those required by the Rule 1133 Series.

OTHER REGULATORY REQUIREMENTS

As part of the BARCT assessment, staff examined chipping and grinding, co-composting, and composting rules promulgated by other jurisdictions. In 2007, the San Joaquin Valley Air Pollution Control District (SJVAPCD) adopted SJVAPCD Rule 4565 – Biosolids, Animal Manure, and Poultry Litter Operations (SJVAPCD Rule 4565). SJVAPCD Rule 4565 requires that operators of co-composting facilities with throughputs between 20,000 wet tons per year and 100,000 wet tons per year to implement a combination of four mitigation measures, designed to reduce VOC emissions by 40% when used in combination, consistent with Rule South Coast AQMD 1133.3 best management practices. South Coast AQMD Rule 1133.2 exempts co-composting operations, if in operation at the time of rule adoption in 2003, with a design capacity of less than 35,000 tons of throughput per year containing no more than 20% biosolids, by volume, from any control requirements.

In 2011, SJVAPCD adopted Rule 4566 – Organic Material Composting Operations (SJVAPCD Rule 4566). SJVAPCD Rule 4566 contains similar provisions to South Coast AQMD Rule 1133.3 regarding composting.

DISCUSSION REGARDING BEST CONTROL MEASURE-11 (BCM-11) – EMISSION REDUCTIONS FROM ORGANIC WASTE COMPOSTING

Within the PM2.5 Plan, in addition to BCM-10, is a second control measure pertaining to the compostable waste industry, referred to as BCM-11. BCM-11 states:

> *This control measure seeks emission reductions of NH3 from the processing of organic waste materials including foodwaste, greenwaste, and agricultural waste. Control approaches include foodwaste co-digestion and integration of anaerobic digestion (AD) with composting. If foodwaste is the only feedstock input to AD, the resulting digestate could be included into greenwaste composting where emission control is governed by Rule 1133.3. This control measure proposes to expand the applicability of Rules 1133.2 and 1133.3 to regulate the co-digestion of foodwaste with biosolids and the integration of foodwaste digestate with greenwaste composting for further emission reductions. An integrated AD-composting system will result in less overall waste and a more useful product.*

While anaerobic digestion of foodwaste is technologically feasible, it is still in a research phase with several research foodwaste operations in-place across South Coast AQMD. The California Air Pollution Control Officers Association (CAPCOA) is also studying foodwaste digestion and composting with their associated emission factors and is preparing to publish updated emission factors for those processes in the near future. Second, the compostable waste industry is currently in a period of transition, shifting from a disposal model to a reuse model under SB 1383. This transition has not been seamless with documented misconduct in neighboring jurisdictions. In addition, numerous waste facilities have recently ceased operating or had problematic operations, including Southeast Resource Recovery Facility (SERRF) in Long Beach, Commerce Refuse-to-Energy in the City of Commerce, Desert View Power (formerly Colmac Energy) in Mecca, El Sobrante Landfill in Corona, Chiquita Canyon Landfill in Castaic, and Sunshine Canyon Landfill in Sylmar. Implementing BCM-11 into rule language would be expected to take considerable time to account for emerging research and unintended consequences to the waste industry thus staff did not implement BCM-11 in this rulemaking. Staff will continue to monitor progress in the research to evaluate when such activities are deemed technologically feasible.

ASSESSMENT OF POLLUTION CONTROL TECHNOLOGIES

Staff assessed two approaches to reduce VOC and ammonia emissions from existing co-composting with design capacity of less than 35,000 tons per calendar year, described below.

BEST MANAGEMENT PRACTICES (BMPs)

Adopted as part of Rule 1133.3 in 2011, a best management practice (BMP) for composting required applying finished compost or compost overs to the top of composting piles so that the peak is six (6) inches thick. Source tests demonstrated that the bulk of emissions escape from the top one-third of compost piles. Finished compost is required to be applied to active phase piles within 24 hours of initial pile construction. The finished compost or compost overs cover acts as a "pseudo-biofilter", adsorbing VOC and ammonia emissions. A second BMP required that piles be

adequately wet prior to turning. According to a 2010 greenwaste mitigation measure study[1], the application of six inches finished compost to the surface of a greenwaste windrow resulted in a 53% reduction in VOC emissions for the 22-day active phase period compared to the regular greenwaste windrow without finished compost on it. In a 2007 emissions study in Modesto[2], a 75% reduction in VOC emissions was achieved with a six-inch layer of finished compost cover for the first two weeks of the active composting phase. Another 2010 emissions research paper[3] using a compost cap of oversized materials screened from finished compost, known as compost overs, showed a reduction of average ozone formation by 27% in five-day-old piles and by 36% in 21-day-old piles. In their 2011 rulemaking, staff concluded that Rule 1133.3 BMPs reduce VOC emissions by 40% and ammonia emissions by 20%.

ENCLOSURE VENTED TO EMISSION CONTROL SYSTEM

Adopted as part of Rule 1133.2 in 2003, non-exempt co-composting operations were required to conduct the active phase of composting within enclosures and to conduct the curing phase under negative pressure, both vented to controls. The minimum control efficiency of these measures must be 80% control of VOC emissions and 80% control of ammonia emissions.

INITIAL BARCT EMISSION LIMIT AND OTHER CONSIDERATIONS

Currently, there is no emission limit for existing co-composting operations with a design capacity of less than 35,000 tons throughput per year. Uncontrolled co-composting emission factors are 1.78 pounds VOC per ton of throughput and 2.93 pounds ammonia per ton of throughput, as published in South Coast AQMD document *Guidelines for Calculating Emissions from Greenwaste Composting and Co-Composting Operations*.[4] Such a facility, if operating at their throughput limit, would be capable of emitting 31.1 tons of VOC and 51.2 tons of ammonia per year.

COST-EFFECTIVENESS AND INCREMENTAL COST-EFFECTIVENESS ANALYSES

BEST MANAGEMENT PRACTICES (BMPs)

The cost for BMPs as described in Rule 1133.3 adoption, at the time of that rulemaking, was determined to be $1.15 per ton throughput. Adjusting for inflation based on the California Consumer Price Index from Year 2010 dollars to Year 2024 dollars results in an adjusted cost of $1.73 per ton throughput. The annual cost to implement BMPs at a co-composting operation with a design capacity of 35,000 tons per year is calculated to be $60,700 per year. The expected emission reductions associated with BMPs at a co-composting operation with a design capacity of 35,000 tons per year are calculated to be 12.4 tons of VOC per year and 10.3 tons of ammonia per year. At the low end, for a facility with a design capacity of 100 tons per year, the annual cost is

[1] SJVAPCD, 2010a. Comparison of Mitigation Measures for Reduction of Emissions Resulting from Greenwaste Composting, Project 09-01 CCOS Draft Final Report.

[2] CIWMB, 2007. Emissions Testing of Volatile Organic Compounds from Greenwaste Composting at the Modesto Compost Facility in the San Joaquin Valley, Contractor's Report to the California Integrated Waste Management Board, October 31, 2007.

[3] CalRecycle, 2010. An Investigation of the Potential for Ground-Level Ozone Formation Resulting from Compost Facility Emissions, Contractor's Report to the California Department of Resources Recycling and Recovery, December 2010.

[4] https://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/greenwaste-and-composting.pdf

expected to be $173 per year with the expected emission reductions calculated to be 0.04 tons VOC and 0.03 tons ammonia per year.

ENCLOSURE VENTED TO EMISSION CONTROL SYSTEM

Cost data to implement enclosure vented to an emission control system was collected from facilities implementing enclosures to comply with other South Coast AQMD rules and from public data sources. Capital cost for construction on a negative pressure enclosure for a co-composting operation with design capacity of 35,000 tons per year is expected to be approximately $9,570,000, with additional cost of $75,000 for a biofilter emission control system. Recurring costs for operation of the enclosure vented to an emission control system, including maintenance and electricity to operate blowers to maintain a negative pressure environment, are expected to be $1,000,000 per year.

In accordance with South Coast AQMD practice to use the Discounted Cash Flow method to account for capital costs, with an interest rate of 4% and life of equipment of 10 years yields $PVF_{(4,10)} = 8.11$. Thus, the Present Value to construct and to operate each enclosure vented to an emission control system over 10 years is calculated at $17,760,000, or $1,776,000 annually. The expected emission reductions associated with this control strategy are calculated to be 24.9 tons of VOC per year and 41.0 tons of ammonia per year.

Combining the costs with the associated emission reductions, Table 2-1 and Table 2-2 presents cost-effectiveness and incremental cost-effectiveness for each control strategy for both VOC and ammonia:

Table 2-1 BARCT VOC Assessment Summary

Proposed Requirement	Best Management Practices	Enclosure Vented to Control
Annualized Cost ($)	$60,700	$1,776,000
Emission Reductions (tons VOC/year)	12.4	24.9
Cost-Effectiveness (per ton VOC)	$4,900	$71,500
Incremental Cost-Effectiveness (per ton VOC)		$138,000

Table 2-2 BARCT Ammonia Assessment Summary		
Proposed Requirement	Best Management Practices	Enclosure Vented to Control
Annualized Cost ($)	$60,700	$1,776,000
Emission Reductions (tons ammonia/year)	10.3	41.0
Cost-Effectiveness (per ton ammonia)	$5,900	$43,400
Incremental Cost-Effectiveness (per ton ammonia)		$56,000

Thus, for co-composting operations that began operating in 2003 or earlier with a design capacity of less than 35,000 tons throughput per year, BMPs were found to be cost-effective with respect to VOC while enclosure with an emission control system was found not to be cost-effective or incremental cost-effective with respect to VOC.

Regarding Table 2-2, the South Coast AQMD Governing Board has not established an approved cost-effectiveness threshold for ammonia, as opposed to VOC or NOx. The cost-effectiveness thresholds, established in the 2022 AQMP, for VOC and NOx are $36,000 per ton and $325,000 per ton, respectively, and are adjusted annually for inflation. The reason for the disparity by almost an order of magnitude between the two cost-effectiveness thresholds is because the cost-effectiveness threshold for NOx is a health benefit-based threshold, taking into account societal benefits, while the VOC cost-effectiveness threshold is not. Staff proposes to reexamine this control measure after the South Coast AQMD Governing Board establishes a cost-effectiveness threshold for ammonia.

BARCT EMISSION LIMIT RECOMMENDATION SUMMARY

Based on the BARCT assessment, staff proposes to require co-composting operations with a design capacity of less than 35,000 tons throughput per year to employ BMPs. Table 2-3 below shows the cost-effectiveness for the proposed requirement:

Table 2-3 BARCT Assessment Summary		
Proposed Requirement	Cost-Effectiveness ($/ton VOC)	Cost-Effectiveness ($/ton ammonia)
Best Management Practices	$4,900	$5,900

CHAPTER 3: SUMMARY OF PROPOSALS

INTRODUCTION

PAR 1133 Series is being amended to implement control measure BCM-10 from the PM2.5 Plan. PAR 1133 restricts the supply of uncomposted greenwaste for direct land application to certain operations or with certain techniques to reduce VOC and ammonia emissions. In addition, PAR 1133.2 requires certain legacy co-composting operations to begin to use best management practices at their operations. The proposed amendments also lower thresholds for exemption to further reduce potential emissions of VOC and ammonia.

The following describes the definitions for PAR 1133 Series and, for each operation-specific rule, the structure of the rule and explanations of the provisions incorporated. New provisions and any modifications to provisions that have been incorporated are also explained. PAR 1133 Series also includes grammatical and editorial changes for clarity.

PROPOSED AMENDED RULE 1133 SERIES DEFINITIONS

Several definitions are proposed to be added, deleted, or substantially modified for clarity and consistency across the entire PAR 1133 Series. Key definition changes are discussed below:

- *Active Phase* – consolidation of *Active Co-composting* and *Active Compost definitions*; modified to relocate time and testing requirements from Definition subdivisions to Requirement subdivisions.
- *Agricultural Operations* – new definition to replace *Agricultural Chipping and Grinding* and *Agricultural Composting* definitions; defined to refer to Rule 102 for consistency.
- *Biomass Power Generation Facility* – new definition to implement acceptable uses for *Uncomposted Greenwaste* and better explain existing exemption for *Chipping and Grinding Operations*. Biomass includes *Greenwaste*, *Woodwaste*, orchard removal trees and could also include material like biochar which is derived from *Woodwaste*.
- *Bioreactor* – new definition added to clarify exclusion from applicability in PAR 1133.3. A *Bioreactor*, in the context of PAR 1133 Series, is a countertop, standalone, or package unit that, with the addition of heat or aeration, rapidly decomposes food scraps and other *Organic Waste Material* into a product that may be used as a soil amendment. Examples of *Bioreactors* are pictured below:

Figures 3-1 through 3-4 – Examples of Bioreactors

- *Biosolids* – new definition added to clarify newly-defined *Organic Waste Material*.
- *Chipping and Grinding Operation* – new definition to replace *Chipping and Grinding* and to standardize rule language across PAR 1133 Series to "operation".

- *Co-composting Operation* – new definition to replace *Co-composting* and to standardize rule language across PAR 1133 Series to "operation".
- *Compost Overs* – modified to remove qualifier "oversized"; the definition *Compost Overs* now includes both the oversized, coarse woody fraction following *Active Phase* and *Curing Phase* of composting as well as the midsized, medium-screened woody fraction, sometimes referred to as compost mulch.
- *Composting Operation* – new definition to replace *Composting*, *Composting Operations,* and *Greenwaste Composting* and to standardize rule language across PAR 1133 Series to "operation".
- *Control Efficiency* – new definition added for consistency and clarity and consolidate differing verbiage in rule text referring to emission reduction, control efficiency, or destruction efficiency.
- *Curing Phase* – consolidation with deleted *Curing* definition; modified to relocate time and testing requirements from Definition subdivisions to Requirement-type subdivisions.
- *Digestate* – new definition added to clarify newly-defined *Organic Waste Material*.
- *Digestion Operation* – new definition to implement acceptable uses for *Uncomposted Greenwaste*.
- *Direct Land Application* – new definition to implement restrictions for *Uncomposted Greenwaste*.
- *Existing Small-Capacity Co-composting Operation* – modification of existing definition *Existing Co-composting Operation;* new definition added to clarify implementation of BMPs for previously-exempt legacy *Co-composting Operations*.
- *Existing Greenwaste Composting Operations* – definition deleted as all phase-in time periods for requirements for legacy facilities have elapsed and distinction between new and existing facility types is no longer necessary.
- *Finished Compost* – consolidation of deleted *Compost* definition in various Rule 1133 series rules.
- *Foodwaste* – modification to reflect changes as a result of SB 1383. Previous definition labeled *Greenwaste* with any amount of *Foodwaste*, including table food scraps, as *Foodwaste*. SB 1383 encourages residences to dispose of food scraps with curbside *Greenwaste*. Definition clarifies that food scraps co-collected with residential curbside *Greenwaste* is considered *Greenwaste*, not *Foodwaste*.
- *Greenwaste* – consolidation of deleted definitions *Curbside Greenwaste, Mixed Greenwaste,* and *Non-Curbside Greenwaste*; definition modified to reflect changes as a result of SB 1383 and add clarity regarding sorting. As explained above in *Foodwaste*, *Greenwaste* includes food scraps co-collected with residential curbside *Greenwaste*. Smaller woody waste less than 4 inches in diameter is typically prunings and trimming with attached greenery, higher nitrogen content, and higher potential to emit ammonia, thus is *Greenwaste* instead of *Woodwaste*.
- *Inadvertent Decomposition* – definition deleted as it is not used within rule requirements.
- *Intermediate Material* – new definition added to implement direct land application requirements; refers to land coverings that have undergone the *Pathogen Reduction Process* such as pathogen-reduced mulch and may also include *Digestate* if the *Digestate* comes exclusively from the digestion of *Greenwaste* and has undergone the *Pathogen Reduction Process*.

- *Landclearing* – definition modified to add clarity and align with statewide regulations.
- *Manure* – new definition added to clarify newly-defined *Organic Waste Material.*
- *New Co-composting Operations* – definition deleted as all phase-in time periods for requirements for legacy facilities have elapsed and distinction between facility types is no longer necessary.
- *New Greenwaste Composting Operations* – definition deleted as all phase-in time periods for requirements for legacy facilities have elapsed and distinction between facility types is no longer necessary.
- *Operator* – definition deleted and newer verbiage "owner or operator" used throughout rule text.
- *Organic Material* – new definition added to implement direct land application requirements; refers to feedstocks, intermediate products, and final products of composting.
- *Organic Material Supplier* – new definition added to implement direct land application requirements; refers to facilities subject to PAR 1133 Series that supply *Organic Material*.
- *Organic Waste Material* – modification of previous definition *Organic Waste*; refers to feedstocks to produce intermediate or final products of composting, such as *Greenwaste*, *Woodwaste, Foodwaste, Biosolids, Digestate,* or *Manure*.
- *Palm Chipping and Grinding* – definition deleted as exemption that referred to this definition was deleted for inconsistency with statewide regulations.
- *Pathogen Reduction Process* – new definition added for consistency and clarity, referring to California Code of Regulations regarding statewide pathogen reduction requirements.
- *Portable Chipping and Grinding Operation* – definition modified as meaning was inconsistent with current interpretation of portable. For more information regarding the meaning of "valid locations", refer to *California Air Pollution Control Officers Association (CAPCOA) Explanation & Examples of Uses of PERP* dated March 12, 2014.[1]
- *Publicly-owned Small-capacity Co-composting Operation* – new definition added for clarity to implement requirements previously located in Exemption subdivision of Rule 1133.2; defined as owned or operated by a public entity and composting 5,000 tons per year or less of *Biosolids* and *Manure*, combined.
- *Rainy Day* – definition deleted as exemption that referred to this definition was deleted due to inconsistency with statewide regulations.
- *Recreational Facilities Composting* – definition deleted and consolidated with *Recreational Facility Composting.*
- *School Composting* – new definition added to implement new exemption to apply to composting performed at schools for educational purposes.
- *Solvita Maturity Index* – definition deleted and test method added to *Test Methods and Protocol* subdivision where needed.
- *Start Up* – definition deleted as all phase-in time periods for requirements for legacy facilities have elapsed and distinction between facility types is no longer necessary.
- *TMECC* – definition deleted and test method added to *Test Methods and Protocol* subdivision where needed.

[1] https://ww2.arb.ca.gov/sites/default/files/2018-11/capcoa_document_3-12-14.pdf

- *Uncomposted Greenwaste* – new definition added to implement direct land application requirements; refers to *Greenwaste* that has not undergone the *Pathogen Reduction Process*. As *Intermediate Material*, *Finished Compost*, and *Compost Overs* have all completed pathogen reduction, they are not considered *Uncomposted Greenwaste*.
- *Wet Weather Conditions* – definition deleted as exemption that referred to this definition was deleted for inconsistency with statewide regulations.
- *Windrow Composting Process* – new definition added for clarity to distinguish between composting using elongated piles mechanically turned, as opposed to the aerated static pile (ASP) composting process using an *Aeration System* (previously defined).
- *Woodwaste* – definition modified to reflect changes as a result of SB 1383 and to add clarity regarding sorting. Larger woody waste greater than 4 inches in diameter is typically large branches, stumps, and tree trunks, largely free of leaves and other green material with lower nitrogen content and lower potential to emit ammonia, thus is *Woodwaste* instead of *Greenwaste*.
- *Woodwaste Composting* – definition deleted as exemption that referred to this definition was deleted for inconsistency with statewide regulations.

PROPOSED AMENDED RULE 1133 (PAR 1133)

PAR 1133 TITLE

The title of PAR 1133 will be modified to "Emission Reductions from Direct Land Application" to more accurately reflect the intent of the rule, repurposed from its original intent as an information-gathering rule.

Subdivision (a) Purpose

The purpose of this rule is modified to identify that the rule is repurposed to establish requirements and prohibitions on organic material for direct land application, instead of information gathering.

Subdivision (b) Applicability

The types of facilities applicable to this rule are the same facilities that are subject to any of the following: PAR 1133.1, PAR 1133.2, or PAR 1133.3. This is consistent with the approach in existing Rule 1133, although expressed slightly differently.

Subdivision (c) Definitions

Definitions for the entire PAR 1133 Series are discussed above with Proposed Amended Rule 1133 Series Definitions.

Subdivision (d) Requirements

PAR 1133 moves the existing information-gathering requirements of subdivision (d) to the various operation-specific rules of PAR 1133 Series.

New requirements are added on the supply of uncomposted greenwaste. PAR 1133 restricts organic material suppliers to supply uncomposted greenwaste to only six categories of facilities: 1) Co-composting operations; 2) Composting operations; 3) Digestion operations; 4) Biomass power generation facilities; 5) Agricultural operations; and 6) Outside South Coast AQMD. Currently, organic material suppliers are not restricted by South Coast AQMD rules on to whom they supply and may provide uncomposted greenwaste to anyone, including those that may not have the ability to minimize greenwaste decomposition emissions. PAR 1133 limits the supply of

uncomposted greenwaste to only operations that can complete the aerobic composting or anaerobic digestion process (categories 1, 2, or 3), combust the greenwaste (category 4), properly apply the uncomposted greenwaste in a manner to minimize emissions (category 5), or remove from South Coast AQMD (category 6).

In addition, PAR 1133 further restricts the supply to agricultural operations only if the recipient informs supplier of their intent to use an acceptable direct land application technique: either 1) land incorporation by tilling, injecting, or plowing to depth of six (6) inches; or 2) cover uncomposted greenwaste with six (6) inches of finished compost or compost overs.

PAR 1133 acknowledges the LEA, enforcing the statewide regulations promulgated by CalRecycle, as the lead agency in the handling of solid waste and determining if land application at agricultural operations is conducted properly. PAR 1133 does not act as an administrative variance from LEA and CalRecycle requirements and organic material suppliers may not supply organic material unless otherwise allowed by the LEA.

Subdivision (e) Recordkeeping

PAR 1133 repurposes existing subdivision (e) *Registration Process* into *Recordkeeping* in order to demonstrate compliance with subdivision (d) *Requirements*. Records must be made to track the supply of uncomposted greenwaste, including recipient information, dates of supply, and quantity of material. Records must be maintained onsite for three (3) years and made available upon request.

Subdivision (f) Prohibitions

PAR 1133 repurposes existing subdivision (f) *Fees* into *Prohibitions* in order to restrict the supply of other organic waste materials with high potential to emit ammonia: 1) foodwaste; 2) biosolids; 3) manure; and 4) digestate. However, digestate may be supplied for direct land application if mitigation measures consistent with paragraph (d)(3) for uncomposted greenwaste are intended to be used. The existing requirement for chipping and grinding operations, co-composting operations, and composting operations to register with South Coast AQMD and submit a fee is eliminated.

Subdivision (g) Exemptions

PAR 1133 establishes a de minimus exemption amount of 100 tons of uncomposted greenwaste supplied, in place of the exemptions by facility type present in existing Rule 1133. Supply of 100 tons of uncomposted greenwaste for direct land application per year, as opposed to composting the uncomposted greenwaste, is expected to emit about one pound of VOC emissions per day and less than one pound of ammonia emissions per day, in keeping with South Coast AQMD guidance for de minimus sources.

PROPOSED AMENDED RULE 1133.1 (PAR 1133.1)

PAR 1133.1 TITLE

The title of PAR 1133.1 will be modified to “Chipping and Grinding Operations” for consistency with other rules in PAR 1133 Series to refer to an “operation” instead of an “activity”.

Subdivision (a) Purpose

The purpose of this rule is modified to use the defined term chipping and grinding operations, similar to PAR 1133.1 title.

Subdivision (b) Applicability

The applicability of PAR 1133.1 is clarified to be chipping and grinding operations not subject to another operation-specific rule within the PAR 1133 Series. However, chipping and grinding operations, if generating chipped and ground greenwaste, woodwaste, or foodwaste for uses other than composting or co-composting onsite would be subject to Rule 1133.1, even if located at facilities that contain co-composting operations subject to Rule 1133.2 or at facilities that contain composting operations subject to Rule 1133.3. An example is a facility that contains a composting operation and also a chipping and grinding operation that generates chipped and ground greenwaste for use at a different offsite composting operation. In that example, the facility would comply with Rule 1133.1 to take measures to prevent inadvertent decomposition from that chipping and grinding operation.

Subdivision (c) Definitions

Definitions for the entire PAR 1133 Series are discussed above with Proposed Amended Rule 1133 Series Definitions.

Subdivision (d) Requirements

PAR 1133.1 leaves existing requirements unchanged with minor changes to rule text for capitalization and style.

Subdivision (e) Recordkeeping

PAR 1133.1 places recordkeeping and document retention requirements in subdivision (e) that were formerly located in subdivision (d) *Requirements*. Former subdivision (e) *Moisture Content Measurement* contained procedures for moisture testing for an exemption and are deleted. The moisture content exemption pathway was inconsistent with statewide rules and is eliminated.

Subdivision (f) Reporting

PAR 1133.1 relocates the information-gathering requirements of Rule 1133 and places them in each of the operation-specific rules of the PAR 1133 Series. For chipping and grinding operations, the reporting requirements, formerly referred to as annual updates, are now located in subdivision (f) of PAR 1133.1. Forms for reporting will be updated and available at the South Coast AQMD website.

Subdivision (g) Exemptions

Formerly identified as subdivision (f), PAR 1133.1 modifies subdivision (g) *Exemptions* by lowering the de minimus exemption from 1,000 cubic yards of greenwaste (231 tons by calculation with default U.S. EPA conversion factors) to 100 tons of greenwaste per year. Chipping and grinding of 100 tons of greenwaste is expected to emit less than one pound of VOC emissions per day and less than one pound of ammonia emissions per day, in keeping with South Coast AQMD guidance for de minimus sources.

PAR 1133.1 also eliminates exemptions for palm chipping and grinding and chipped and ground curbside greenwaste held under 30% moisture content. These exemptions were inconsistent with statewide waste handling rules. PAR 1133.1 also eliminates exemptions for landfills and biomass power generation facilities that do not perform chipping and grinding of greenwaste onsite. As those facilities do not perform chipping and grinding onsite, they are not subject to PAR 1133.1 and do not require exemption.

PROPOSED AMENDED RULE 1133.2 (PAR 1133.2)

Subdivision (a) Purpose

The purpose of the rule is unchanged with minor modifications for capitalization and style.

Subdivision (b) Applicability

The applicability of the rule is unchanged with minor modification for capitalization and style.

Subdivision (c) Definitions

Definitions for the entire PAR 1133 Series are discussed above with Proposed Amended Rule 1133 Series Definitions.

Subdivision (d) Requirements

PAR 1133.2 leaves existing requirements largely intact. Certain requirements for the active phase and curing phase of composting regarding time and testing, formerly located in subdivision (c) *Definitions*, are now in subdivision (d) *Requirements*. Active phase is complete either 22 days after mixing co-composting feedstock, when product achieves a Solvita Compost Maturity Index of 4.5 or greater, or after completing the pathogen reduction process. Curing phase is complete either 40 days after active phase is complete, when product achieves a Solvita Compost Maturity Index of 6.0 or greater, or a respiration rate under 10 mg O_2 per gram volatile solids as measured by direct respirometry. For enclosure testing, PAR 1133.2 also allows the use of colorimetric testing, such as Dräger tubes, or other equally effective methods approved by the Executive Officer to detect hydrocarbon or ammonia. PAR 1133.2 now clearly specifies daily enclosure testing and determination of background levels.

In addition, Rule 1133.2 formerly contained an alternative pathway to comply with the 80% control efficiency requirement for emission control systems for VOC and ammonia, respectively. This alternative path involved the use of a compliance plan per subdivision (e) and to demonstrate 80% control efficiency against baseline emission factors for co-composting (1.78 pounds of VOC emissions per ton throughput and 2.93 pounds ammonia emissions per ton throughput). PAR 1133.2 updates the alternative compliance pathway by eliminating the need for a compliance plan and instead requires demonstration of a mass emission rate of 0.35 pound VOC emissions per ton throughput and 0.58 pound ammonia emissions per ton throughput, which is 80% control efficiency against baseline emission factors for co-composting. Facilities may also comply by demonstrating 80% control efficiency for both VOC and ammonia against baseline emission factors or operation-specific emission factors, if approved by the Executive Officer.

Source testing requirements to demonstrate control efficiency or the mass emission rate are also updated by PAR 1133.2. PAR 1133.2 now requires source testing be performed within one (1) year of startup of the emission control system. After this initial performance source test, periodic source testing is still required every two (2) years, as in existing Rule 1133.2.

PAR 1133.2 also formalizes two additional compliance pathways, formerly located in subdivision (j) *Exemptions*. PAR 1133.2 now requires co-composting operations existing at the time of original rule adoption in 2003 with a design capacity of less than 35,000 tons throughput per year, formerly exempt from all controls, to comply with subdivision (d) or comply with windrow composting best management practices described in subdivision (e). PAR 1133.2 also now requires publicly-owned co-composting operations to comply with subdivision (d) or comply with an alternative pathway in subdivision (f), formerly located in Rule 1133.2 subdivision (j) *Exemptions*.

Subdivision (e) Existing Small-capacity Co-composting Operation Alternative

PAR 1133.2 eliminates the existing *Compliance Plan* requirements formerly located in subdivision (e) and repurposes the subdivision for windrow composting process best management practices, adopted in Rule 1133.3. See PAR 1133.3 subdivision (d) *Requirements* for a thorough explanation of the windrow composting process best management practices. Subdivision (e) is a compliance alternative for existing small-capacity co-composting operations instead of complying with subdivision (d) and enclosure and emission control system requirements.

Subdivision (f) Publicly-owned Small-capacity Co-composting Operation Alternative

PAR 1133.2 relocates a compliance alternative for smaller municipal co-composting operations, formerly located in subdivision (j) *Exemptions,* into dedicated subdivision (f). Subdivision (f), formerly titled *Compliance Schedule*, contained compliance deadlines that are now all in the past and have been deleted. Subdivision (f) is a compliance alternative for publicly-owned small-capacity co-composting operations instead of complying with subdivision (d) and enclosure and emission control system requirements.

This compliance alternative has also been updated to allow either 1) demonstration of 80% control of VOC emissions and 80% control of ammonia emissions or 2) demonstration of 80% control of the baseline emission factors, by demonstration of a mass emission rate of no more than 0.35 pound VOC emissions per ton throughput and no more than 0.58 pound ammonia emissions per ton throughput. Facilities may also comply by demonstrating 80% control efficiency for both VOC and ammonia against baseline emission factors or operation-specific emission factors, if approved by the Executive Officer.

Subdivision (g) Test Methods and Protocol

Formerly titled *Testing and Protocol*, PAR 1133.2 modifies subdivision (g) by adding updated source testing expectations consistent with other recently adopted or amended rules. PAR 1133.2 requires a source test protocol to be submitted prior to source testing, to submit a new protocol if equipment is changed or if requested by the Executive Officer, to conduct source testing in accordance with the valid approved source test protocol, and to submit the source testing report within 60 days of sampling. PAR 1133.2 also updates the subdivision for style and clarity, adds references to test methods for Solvita Compost Maturity Index and direct oxygen respirometry, consistent with Rule 1133.3, and specifies how to measure background ammonia and hydrocarbon levels outside enclosures.

Subdivision (h) Recordkeeping

PAR 1133.2 updates the subdivision by listing records required to be maintained by co-composting operations and by expressing the record retention requirements in language consistent with the other rules within the PAR 1133 Series.

Subdivision (i) Reporting

PAR 1133.2 relocates the information-gathering requirements of Rule 1133 and places them in each of the operation-specific rules of PAR 1133 Series. For co-composting operations, the reporting requirements, formerly referred to as annual updates, are now located in subdivision (i) of PAR 1133.2. The requirements of existing Rule 1133.2 subdivision (i) *Plan Fees* are no longer appropriate as PAR 1133.2 deleted reference to compliance plans. Forms for reporting will be updated and available at the South Coast AQMD website.

Subdivision (j) Exemptions

PAR 1133.2 updates the exemptions of Rule 1133.2 by eliminating the exemption for existing small-capacity co-composting operations and relocating the requirements for publicly-owned co-composting operations to subdivision (f). PAR 1133.2 also lowers the existing de minimus throughput exemption from 1,000 tons of throughput per year to 100 tons of throughput per year. Using baseline emission factors for co-composting, exempt co-composting operations could emit as much as five pounds of VOC emissions per day and eight pounds of ammonia emission per day. By lowering the de minimus exemption limit by a factor of ten and calculated using baseline emission factors, exempt co-composting operations will emit less than one pound of VOC emissions per day and less than one pound of ammonia emissions per day, consistent with South Coast AQMD guidance for de minimus sources.

PAR 1133.2 adds an exemption from the requirements of subdivision (d) to perform the active phase of composting within an enclosure for the limited purpose of source testing to develop operation-specific baseline emission factors. The exemption necessitates a source test protocol be submitted and approved by the Executive Officer, in accordance with paragraph (g)(1) regarding source testing.

Attachment A - Guidelines for the Development of Source Test Protocols for VOC and Ammonia Emissions from Co-composting Operations

PAR 1133.2 updates Attachment A by refining minimum flux sample locations and piles tested and also standardizing rule language for capitalization, consistency, and clarity with the other rules in the PAR 1133 Series.

PROPOSED AMENDED RULE 1133.3 (PAR 1133.3)

PAR 1133.3 TITLE

The title of PAR 1133.3 is modified to "Emission Reductions from Composting Operations" for clarity. Previously, the rule title referenced "greenwaste composting" and, as foodwaste composting is expected to increase as a result of increased compliance with SB 1383, the title change improves communication that the rule applies to composting of foodwaste as well.

Subdivision (a) Purpose

The purpose of the rule is unchanged with minor modifications for capitalization and style.

Subdivision (b) Applicability

PAR 1133.3 makes minor changes to the applicability of the rule, by specifying that the rule applies to all composting operations except those operations subject to Rule 1133.2. This is a change to improve clarity but is not expected to increase or decrease the number of operations subject to rule.

PAR 1133.3 also excludes from applicability a category of devices described as bioreactors, now defined in rule language, with a design capacity of less than 1,000 tons per calendar year. There is some literature[2] that these devices may emit VOC emissions at rates two orders of magnitude less than default composting emission factors, in the range of 0.033 pounds VOC per wet ton of feedstock. Staff was unable to detect ammonia emission factors for this category of devices. As

[2] https://rex.libraries.wsu.edu/esploro/outputs/doctoral/MEASUREMENT-OF-VOLATILE-ORGANIC-COMPOUND-AND/99900898735001842

ammonia emission factors were unknown, staff took a cautious approach and bioreactors with a design capacity of less than 1,000 tons per calendar are expected to emit much less than one pound of VOC per day, in the range of one-tenth of one pound per day. Future source testing data including ammonia emissions may support modifying this applicability limit. While PAR 1133.3 does not apply to this category of devices, bioreactors may be subject to air quality permitting.

Subdivision (c) Definitions

Definitions for the entire PAR 1133 Series are discussed above with Proposed Amended Rule 1133 Series Definitions.

Subdivision (d) Requirements

PAR 1133.3 leaves existing requirements largely intact. Certain requirements for the active phase and curing phase of composting regarding time and testing, formerly located in subdivision (c) *Definitions*, are now in subdivision (d) *Requirements*. Active phase is complete either 22 days after mixing composting feedstock, when product achieves a Solvita Compost Maturity Index of 4.5 or greater, or after completing the pathogen reduction process. Curing phase is complete either 40 days after active phase is complete, when product achieves a Solvita Compost Maturity Index of 6.0, or greater or a respiration rate under 10 mg O_2 per gram volatile solids as measured by direct respirometry.

PAR 1133.3 clarifies existing Rule 1133.3 language that an aeration system venting to an emission control system, known as aerated static pile (ASP) composting, is only required for composting operations that process more than 5,000 tons of foodwaste per year and only for piles with more than 10% foodwaste, by weight. At facilities that process less than 5,000 tons of foodwaste per year, the ASP composting process or the windrow composting process may be used. At facilities that process more than 5,000 tons of foodwaste per year, any pile with less than 10% foodwaste, by weight, may be composted with the windrow composting process, without an aeration system.

PAR 1133.3 clarifies windrow composting best management practices (BMPs) language. For the windrow composting process, BMPs include:

1) Cover each active phase pile within 24 hours with finished compost or compost overs so that the top of the pile cover is at least six (6) inches thick.
2) Ensure that prior to turning an active phase pile, the pile is sufficiently wet at a depth of three (3) inches by the Squeeze Ball Test.

Windrow composting BMPs language was modified to improve clarity and consistency. PAR 1133.3 also retains rule language that allows for alternatives to the squeeze ball test, such as moisture sensors, and alternatives to BMPs if able to demonstrate at least 40% control of VOC emissions and 20% control of ammonia emissions, consistent with expected performance of BMPs.

PAR 1133.3 updates aeration system requirements, by integrating the alternative compliance pathway as a mass emission limit for emission control systems. Rule 1133.3 formerly contained an alternative pathway to comply with the 80% control efficiency requirement for emission control systems for VOC and ammonia, respectively. This alternative path involved demonstrating 80% control efficiency against baseline emission factors for the active phase of composting (4.25 pounds of VOC emissions per ton throughput and 0.46 pound ammonia emissions per ton throughput). PAR 1133.3 updates the alternative compliance pathway by requiring demonstration of a mass emission rate of 0.85 pounds VOC emissions per ton throughput and 0.092 pounds

ammonia emissions per ton throughput, which is 80% control efficiency against baseline emission factors for the active phase of composting. Facilities may also comply by demonstrating 80% control efficiency for both VOC and ammonia against operation-specific emission factors, if approved by the Executive Officer.

Source testing requirements to demonstrate control efficiency or the mass emission rate are also updated by PAR 1133.3. PAR 1133.3 now requires source testing be performed within one (1) year of startup of the emission control system. After this initial performance source test, periodic source testing is still required every three (3) years, as in existing Rule 1133.3.

Subdivision (e) Test Methods and Protocol

PAR 1133.3 modifies subdivision (e) by adding updated source testing expectations consistent with other recently adopted or amended rules. PAR 1133.3 requires a source test protocol to be submitted prior to source testing, to submit a new protocol if equipment is changed or if requested by the Executive Officer, to conduct source testing in accordance with the valid approved source test protocol, and to submit the source testing report within 60 days of sampling. PAR 1133.3 also updates the subdivision for style and clarity.

Subdivision (f) Recordkeeping

PAR 1133.3 updates the subdivision by listing records required to be maintained by composting operations and by expressing the record retention requirements in language consistent with the other rules within the PAR 1133 Series.

Subdivision (g) Reporting

PAR 1133.3 relocates the information-gathering requirements of Rule 1133 and places them in each of the operation-specific rules of PAR 1133 Series. For composting operations, the reporting requirements, formerly referred to as annual updates, are now located in subdivision (g) of PAR 1133.3. Forms for reporting will be updated and available at the South Coast AQMD website.

Subdivision (h) Exemptions

Formerly organized as subdivision (g), PAR 1133.3 updates the exemptions of Rule 1133.3 by eliminating two non-essential exemptions: 1) Operations subject to Rule 1133.2 are now not subject to PAR 1133.3 by exclusion in subdivision (b) *Applicability*; and 2) Operations using aeration system or ASP composting are not subject to windrow composting BMPs per subdivision (d) *Requirements.*

PAR 1133.3 establishes a de minimus throughput exemption of 100 tons of throughput per year, consistent with the other rules of PAR 1133 Series. Using baseline emission factors for composting, exempt composting operations could emit as much as one pound of VOC emissions per day and less than one pound of ammonia emission per day, consistent with South Coast AQMD guidance for de minimus sources. PAR 1133.3 also establishes a school composting exemption, for composting at a public or private school for the purpose of education.

Attachment A - Guidelines for the Development of Source Test Protocols for VOC and Ammonia Emissions from Composting Operations

PAR 1133.3 updates Attachment A by refining minimum flux sample locations and piles tested and also standardizing rule language for capitalization, consistency, and clarity with the other rules in the PAR 1133 Series.

CHAPTER 4: IMPACT ASSESSMENTS

INTRODUCTION

Impact assessments were conducted as part of PAR 1133 Series rule development to assess the environmental and socioeconomic implications. These impact assessments include emission reduction calculations, cost-effectiveness and incremental cost-effectiveness analyses, a socioeconomic impact assessment, and a California Environmental Quality Act (CEQA) analysis. Staff will prepare draft findings and a comparative analysis pursuant to Health and Safety Code Sections 40727 and 40727.2, respectively.

EMISSION REDUCTIONS

PAR 1133 achieves VOC and ammonia emission reductions largely through two strategies: 1) restricting the supply of uncomposted greenwaste only to certain facilities and, in some cases, only if using certain mitigation measures; and 2) requiring smaller legacy co-composting operations to use best management practices.

Quantification of both VOC and ammonia emissions from direct land application of uncomposted greenwaste has not been studied directly. As mentioned earlier, CAPCOA is studying VOC and ammonia emission factors for the compostable waste industry and is preparing to publish updated emission factors for those processes in the near future. Recent source testing of direct land application has emphasized greenhouse gas emissions. Additionally, nitrogenous compounds other than ammonia have been studied. Several older source tests have been performed over the past quarter century at composting facilities where stockpile operations have also been studied. The emission data from stockpile operations are expected to more accurately model the emission profile of direct land application than composting operations as stockpiling will not have careful pile construction or moisture monitoring that composting operations exhibit. For reference, the default South Coast AQMD uncontrolled composting emission factors are 4.67 pounds VOC and 0.66 pounds ammonia per ton of throughput.

After a review of source test reports, five results were discovered that present both VOC and ammonia emission factors for greenwaste stockpile operations. The longest timeframe published in these source test reports was 90 days. One result is excluded as an outlier: according to the source test report, the stockpile also contained winery waste and the resulting VOC and ammonia data differs by one-half to two orders of magnitude, respectively. Also presented are default stockpile emission factors. SJVAPCD has published[1] in their Compost Emission Factor Report, revised March 21, 2023, VOC and ammonia emission factors for organic material stockpile. The results of those source tests and default emission factors, normalized across a 90-day time period, are presented below in Table 4-1 and Table 4-2, respectively:

[1] https://ww2.valleyair.org/media/hdsoobtp/criteria-compost-emission-factors-report-final-voc-nh3-3-21-23.pdf

Table 4-1 VOC Emission Factors from Source Testing and Default Factor			
Source	VOC Emissions (lbs/ton)	Timeframe (days)	Emission Factor (lbs/ton/90 days)
Zamora Facility	11.34	90	11.34
Vacaville Facility	2.95	7	37.93
Colton Facility (winter)	0.909	9	9.09
Colton Facility (fall)	2.793	21	11.97
Average of source test results			**17.58**
SJVAPCD stockpile emission factor	0.2	1	18.0

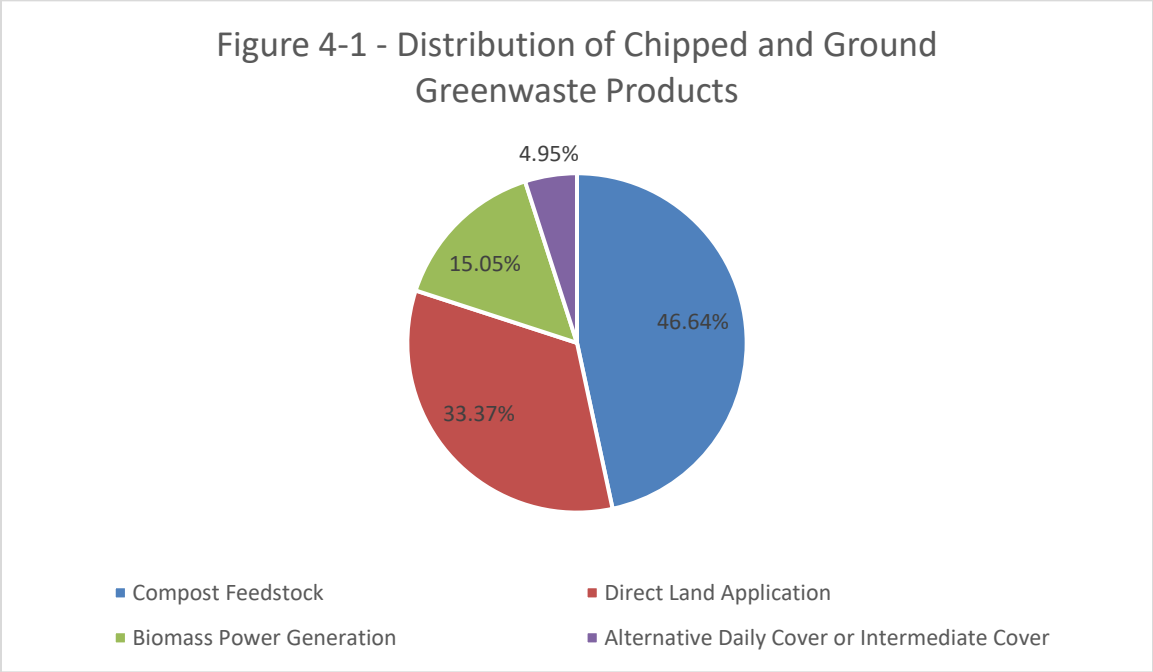
Table 4-2 Ammonia Emission Factors from Source Testing and Default Factor			
Source	Ammonia Emissions (lbs/ton)	Timeframe (days)	Emission Factor (lbs/ton/90 days)
Zamora Facility	1.64	90	1.64
Vacaville Facility	0.07	7	0.90
Colton Facility (winter)	0.063	9	0.63
Colton Facility (fall)	0.693	21	2.97
Average of source test results			**1.54**
SJVAPCD stockpile emission factor	0.02	1	1.8

For the purpose of quantifying emissions associated with direct land application over one year, the emission factors of 17.58 pounds VOC and 1.54 pounds ammonia per ton of throughput, respectively, will be used. Although not studied over an entire year, these stockpile emission

factors normalized across a 90-day time period represent the most accurate representation of VOC and ammonia emissions associated with direct land application. These emission factors are consistent with the default SJVAPCD stockpile emission factors, extrapolated across 90 days. These emission factors are also consistent with the South Coast AQMD default uncontrolled composting emission factors, considering direct land application is not in favorable biological conditions, unlike composting, and certain organisms that consume VOC and ammonia are not expected to be active in a direct land application setting.

Next, staff reviewed Rule 1133 Annual Updates submitted to South Coast AQMD. Of the 98 facilities detected subject to Rule 1133 Annual Updates, 44 facilities submitted at least one Rule 1133 Annual Update over the past 12 years. Almost all of the 98 facilities are also included in the CalRecycle SWIS database and have facility profiles with acreage and periodic inspection reports including facility activity. Using submitted data and reported acreage, staff developed a conversion factor to calculate projected chipping and grinding activity from acreage and projected composting activity from acreage. Using these methods, staff developed an estimate of the total amount of chipping and grinding of greenwaste at 2,460,000 tons per year.

Staff also reviewed each facility's most recently submitted Rule 1133 Annual Updates to determine the distribution of the products of greenwaste chipping and grinding. Based on those reports, the products of greenwaste chipping and grinding are distributed as shown in Figure 4-1:



Based on these data, staff concluded that 33.37% of chipped and ground greenwaste is used for direct land application, or approximately 820,800 tons.

After discussions with operators and experts and after reviewing a 2019 CalRecycle study regarding the compostable waste industry produced by Integrated Waste Management Consulting,

LLC, titled *SB 1383 Infrastructure and Market Analysis*[2], staff believes that approximately 82% of chipping and ground greenwaste for land application has either undergone the pathogen reduction process including testing, has completed at least the active phase of composting and may be marketed as colored woody landcover, screened landcover, or other products, or is applied by land incorporation such as tilling. The remaining 18%, identified in the study as "Mulch for direct land application", or 147,800 tons, is the focus of the direct land application restrictions.

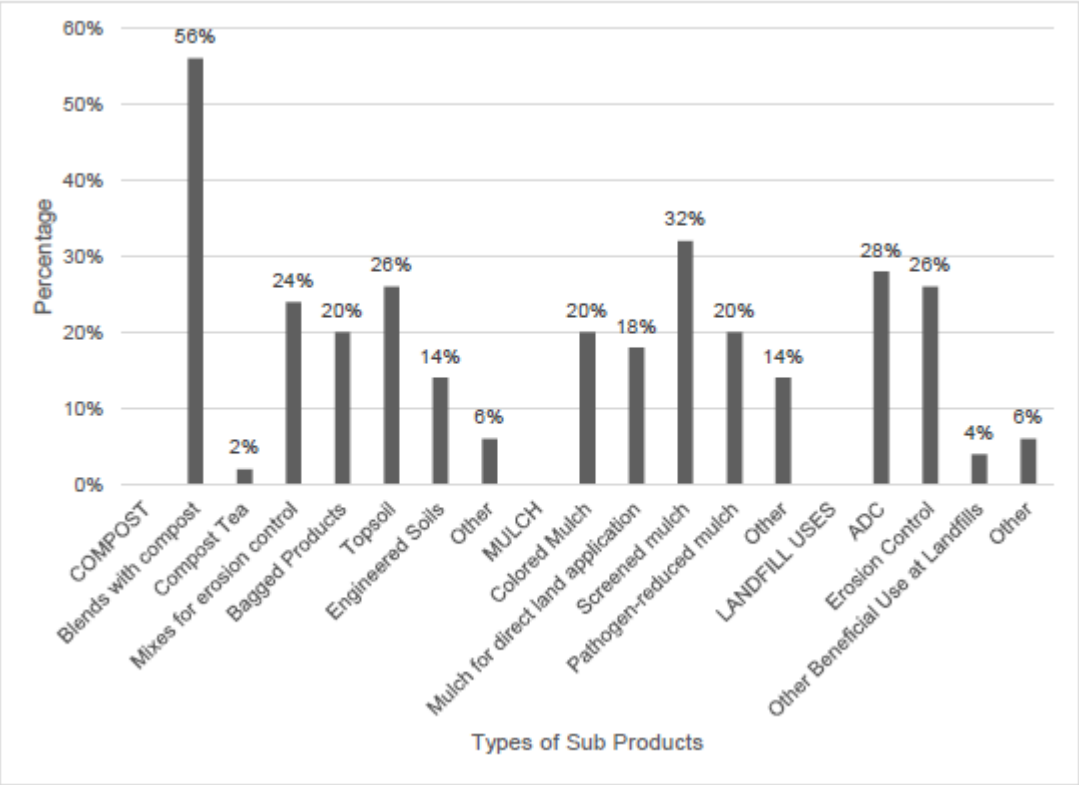


Figure 4-2 – From 2019 CalRecycle study: Types of Sub-Products Manufactured

PAR 1133 proposed two acceptable direct land application techniques: 1) land incorporation by tilling, injecting, or plowing; or 2) cover uncomposted greenwaste with finished compost or compost overs. Land incorporation of uncomposted greenwaste was the focus of a 2015 CalRecycle research study, conducted by the University of California, Davis, titled *Research to Evaluate Environmental Impacts of Direct Land Application of Uncomposted Green and Woody Wastes on Air and Water Quality*.[3]

[2] https://www2.calrecycle.ca.gov/Publications/Details/1652
[3] https://www2.calrecycle.ca.gov/Publications/Details/1531

The 2015 study found that tilling uncomposted greenwaste to a depth of six (6) inches reduces VOC and nitrogenous compound emissions to near background levels, according to Figure 4-3.

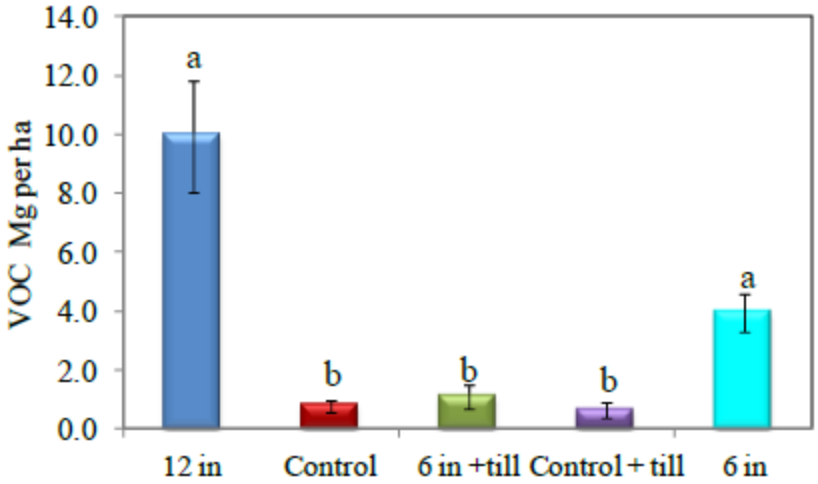


Figure 4-3 – From 2015 CalRecycle study: Mean cumulative VOC fluxes from the one-year experiment

For VOC, applying six (6) inches of uncomposted greenwaste resulted in approximately 4.0 Mg VOC per hectare, or about 1.8 tons VOC per acre. If the uncomposted greenwaste is tilled, VOC emissions are 0.8 Mg VOC per hectare, or 0.36 tons VOC per acre. Background VOC emissions from tilled soil is approximately 0.4 Mg VOC per hectare, or 0.18 tons VOC per acre. Thus, tilling uncomposted greenwaste into soil is expected to reduce the uncomposted greenwaste contribution to VOC emissions from 3.2 Mg per hectare to 0.4 Mg per hectare, a reduction of approximately 90%.

While the 2015 study did not include ammonia, it did include a different volatile nitrogenous compound, N_2O, and the control of N_2O will be applied to ammonia, as shown in Figure 4-4.

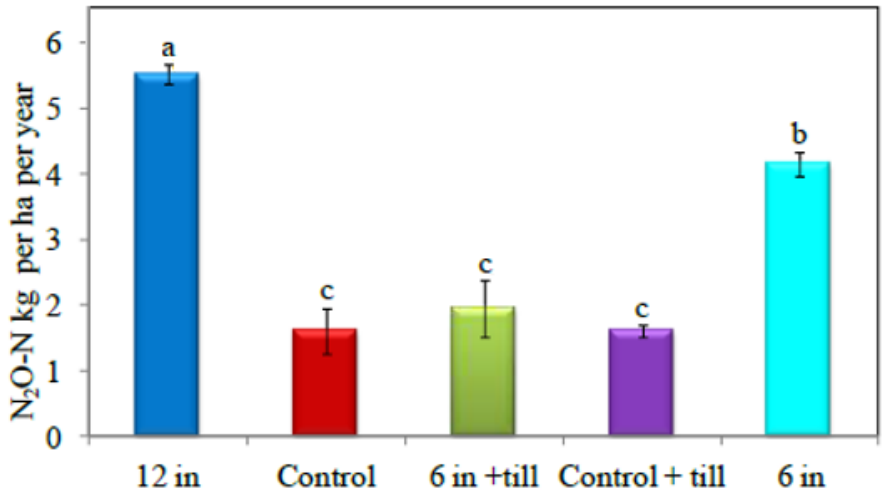


Figure 4-4 – Mean cumulative N_2O fluxes for the one-year field experiment

For N_2O, tilling reduced emissions from 4.0 Mg per hectare to 2.0 Mg per hectare. Background N_2O emissions were 1.6 Mg per hectare. The contribution of the uncomposted greenwaste was reduced from 2.4 Mg per hectare to 0.4 Mg per hectare, or approximately 80% control. Assuming tilling to a depth of six (6) inches reduces VOC emissions by 90% and ammonia emissions by 80%, the emission factors for uncomposted greenwaste after land incorporation are 1.76 pounds VOC and 0.31 pounds ammonia per ton of uncomposted greenwaste, respectively.

During the 2011 Rule 1133.3 rulemaking process, staff found that applying a six (6) inch cover of finished compost or compost overs creates a "pseudo-biofilter" on windrow composting piles and reduces VOC and ammonia emissions by 40% and 20%, respectively. Assuming these same emission reductions yields emission factors for uncomposted greenwaste, covered with six (6) inches of finished compost or compost overs after direct land application, of 10.55 pounds VOC and 1.23 pounds ammonia per ton of uncomposted greenwaste, respectively.

Table 4-3 and Table 4-4 shows the estimated emission reductions for VOC and ammonia, respectively, associated with restrictions on supply of uncomposted greenwaste for agricultural operation direct land application, assuming 50% of uncomposted greenwaste is incorporated into land and 50% is covered with finished compost or compost overs.

Table 4-3 VOC Emission Reductions from Direct Land Application Restrictions

Land Application Technique	Throughput (tons)	VOC Emission Factor (lbs/ton)	VOC Emissions (tons per year)
Uncontrolled	*147,800*	*17.58*	*1,299.2*
Land Incorporation	**73,900**	**1.76**	**65.0**
Compost Cover	**73,900**	**10.55**	**389.7**
Emission Reductions (land incorporation and compost cover emissions versus uncontrolled land application emissions)			844.5

Table 4-4 Ammonia Emission Reductions from Direct Land Application Restrictions			
Land Application Technique	Throughput (tons)	Ammonia Emission Factor (lbs/ton)	Ammonia Emission (tons per year)
Uncontrolled	*82,080*	*1.54*	*133.8*
Land Incorporation	**41,040**	**0.31**	**11.4**
Compost Cover	**41,040**	**1.23**	**45.5**
Emission Reductions (land incorporation and compost cover emissions versus uncontrolled land application emissions)			56.9

Combined, restrictions on the supply of uncomposted greenwaste used for direct land application and requiring legacy co-composting operations to use best management practices is expected to reduce VOC and ammonia emissions in the South Coast AQMD. For a detailed analysis of the projected VOC and ammonia emission reductions associated with best management practices for smaller legacy co-composting operations, please refer to Chapter 2. Table 4-5 and Table 4-6 show the combined VOC and ammonia emissions associated with the PAR 1133 Series.

Table 4-5 VOC Emission Reductions from PAR 1133 Series		
Proposed Requirement	VOC Emission Reductions (tons per year)	VOC Emission Reductions (tons per day)
Restricting supply of uncomposted greenwaste (PAR 1133)	844.5	2.31
Best management practices for smaller legacy co-composters (PAR 1133.2)	12.4	0.034
Overall	856.9	2.34

Table 4-6 Ammonia Emission Reductions from PAR 1133 Series		
Proposed Requirement	Ammonia Emission Reductions (tons per year)	Ammonia Emission Reductions (tons per day)
Restricting supply of uncomposted greenwaste (PAR 1133)	56.9	0.16
Best management practices for smaller legacy co-composters (PAR 1133.2)	10.3	0.028
Overall	67.2	0.19

PAR 1133 Series total VOC emission reductions are 2.34 tons per day and total ammonia emission reductions are 0.19 tons per day.

COSTS AND COST-EFFECTIVENESS

Health and Safety Code Section 40920.6 requires a cost-effectiveness analysis when establishing BARCT requirements. The cost-effectiveness of a control is measured in terms of the control cost in dollars per ton of air pollutant reduced. The costs for the control technology include purchasing, installation, operation, maintenance, and permitting. Emission reductions were calculated for each requirement and based on estimated baseline emissions. The 2022 AQMP established a cost-effectiveness threshold of $36,000 per ton of VOC reduced. After adjusting for inflation, the cost-effectiveness threshold is $41,400 per ton of VOC reduced (2024 U.S. Dollars). A cost-effectiveness that is greater than the threshold of $41,400 per ton of VOC reduced requires additional analysis and a hearing before the Governing Board on costs.

The cost-effectiveness is estimated based on the present value of the retrofit cost, which was calculated according to the capital cost (initial one-time equipment and installation costs) plus the annual operating cost (recurring expenses over the useful life of the control equipment multiplied by a present worth factor). Capital costs are one-time costs that cover the components required to assemble a project. Annual costs are any recurring costs required to operate equipment. Costs for this proposal were obtained from available literature, vendors, and facilities.

Costs associated with PAR 1133 restrictions on supply of uncomposted greenwaste are largely administrative, for recordkeeping to document compliance. Statewide CalRecycle regulations regarding land application already require that no additional uncomposted greenwaste may be delivered until the previous application has been tilled into the soil. Sites that do not till uncomposted greenwaste into soil within 30 days are considered landfill disposal sites and require permitting as such. This requirement applies to sites receiving more than 4,040 cubic yards of uncomposted greenwaste. Staff estimates that 86 of the 98 facilities subject to PAR 1133 Series provide uncomposted greenwaste for use offsite. The estimated quantity of chipped and ground greenwaste is 2,460,000 tons per year. Staff estimates that approximately 50% of this chipped and ground greenwaste is used onsite of the facility where it was processed while the other 50% is transferred offsite. Waste transfer trucks vary in size, but assuming a transfer truck capacity of 25 tons per load, currently in South Coast AQMD, 49,200 transfers by truck of uncomposted

greenwaste occur each year from the estimated 86 facilities providing uncomposted greenwaste offsite.

With 49,200 truck transfers occurring over 250 operating days per calendar year, approximately 200 truck transfers occur each operating day. For the 86 facilities providing uncomposted greenwaste offsite, that is an average of three truck transfers per day. To document these transfers, staff assumes approximately 0.25 hours of labor per operating day per facility. At a labor rate of $25 per hour, the estimated cost of compliance with PAR 1133 recordkeeping requirements across South Coast AQMD is $134,400 per year.

Details regarding costs and cost-effectiveness determinations associated with best management practices for smaller legacy co-composting operations are included in Chapter 2. The overall cost-effectiveness of the proposed amended rule is $400 per ton of VOC reduced. The cost-effectiveness for each proposed requirement and the overall cost-effectiveness is summarized in Table 4-7 and Table 4-8.

Table 4-7 Summary of VOC Cost-Effectiveness

Proposed Requirement	Annualized Cost	Annual VOC Reductions (tons per year)	Cost-Effectiveness ($/ton VOC)
Restricting supply of uncomposted greenwaste (PAR 1133)	$134,400	844.5	$160
Best management practices for smaller legacy co-composters (PAR 1133.2)	$60,700	12.4	$4,900
Overall	$195,100	856.9	$230

Table 4-8 Summary of Ammonia Cost-Effectiveness

Proposed Requirement	Annualized Cost	Annual Ammonia Reductions (tons per year)	Cost-Effectiveness ($/ton ammonia)
Restricting supply of uncomposted greenwaste (PAR 1133)	$134,400	56.9	$2,400
Best management practices for smaller legacy co-composters (PAR 1133.2)	$60,700	10.3	$5,900
Overall	$195,100	67.2	$2,900

INCREMENTAL COST-EFFECTIVENESS

Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for BARCT rules or emission reduction strategies when there is more than one control option which would achieve the emission reduction objective of the proposed amendments, relative to ozone, CO, SOx, NOx, and their precursors. Since volatile organic compounds are precursors to ozone, an incremental cost-effectiveness analysis is required for controls proposed to limit VOC emissions. Incremental cost-effectiveness is the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control options as compared to the next less expensive control option.

Incremental cost-effectiveness is calculated as following:

$$Incremental\ Cost \cdot Effectiveness = \frac{Cost\ of\ Option\ 2 - Cost\ of\ Option\ 1}{Benefit\ of\ Option\ 2 - Benefit\ of\ Option\ 1}$$

Details regarding costs and incremental cost-effectiveness determinations are included in Chapter 2. The incremental cost-effectiveness for each next more stringent proposed requirement is summarized in Table 4-9 and Table 4-10 below.

Table 4-9 Summary of VOC Incremental Cost-Effectiveness

Next More Stringent Proposed Requirement	Incremental Annualized Cost	Incremental Annual VOC Emission Reductions (tons per year)	Incremental Cost-Effectiveness ($/ton VOC)
Enclosure Vented to Emission Control System	$1,715,0000	12.5	$138,000

Table 4-10 Summary of Ammonia Incremental Cost-Effectiveness

Next More Stringent Proposed Requirement	Incremental Annualized Cost	Incremental Annual Ammonia Reductions (tons per year)	Incremental Cost-Effectiveness ($/ton ammonia)
Enclosure Vented to Emission Control System	$1,715,000	30.7	$56,000

SOCIOECONOMIC IMPACT ASSESSMENT

A Socioeconomic Impact Assessment, included in the Draft Staff Report as Appendix A, has been prepared and released for public review and comment at least 30 days prior to the South Coast AQMD Governing Board Hearing for the PAR 1133 Series, which is scheduled for September 5, 2025 (subject to change).

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project (PAR 1133 Series) is exempt from CEQA pursuant to CEQA Guidelines Sections 15061(b)(3) and 15308. Further, there is no substantial evidence that the exceptions to the categorical exemptions, as set forth in CEQA Guidelines Section 15300.2, apply to the proposed project. A Notice of Exemption will be prepared pursuant to CEQA Guidelines Section 15062. If the proposed project is approved, the Notice of Exemption will be filed for posting with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties, and with the State Clearinghouse of the Governor's Office of Land Use and Climate Innovation.

DRAFT FINDINGS UNDER HEALTH & SAFETY CODE SECTION 40727

Requirements to Make Findings

Health and Safety Code Section 40727 requires that the Governing Board make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report. In order to determine compliance with Health and Safety Code Section 40727, Health and Safety Code Section 40727.2 requires a written analysis comparing the proposed amended rules with existing regulations, if the rules meet certain requirements.

Necessity

A need exists to amend PAR 1133 Series to implement Best Control Measure-10 (BCM-10) from the South Coast Air Basin Attainment Plan for the 2012 Annual PM2.5 Standard (PM2.5 Plan) to further reduce VOC and ammonia emissions.

Authority

The South Coast AQMD obtains its authority to adopt, amend, or repeal rules and regulations pursuant to Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702, 40725 through 40728, 40920.6, and 41508.

Clarity

PAR 1133 Series is written or displayed so that its meaning can be easily understood by the persons directly affected by them.

Consistency

PAR 1133 Series is in harmony with and not in conflict with or contradictory to existing statutes, court decisions, or state or federal regulations.

Non-Duplication

PAR 1133 Series will not impose the same requirements as any existing state or federal regulations. The proposed amended rules are necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD.

Reference

In amending these rules, the following statutes which the South Coast AQMD hereby implements, interprets or makes specific are referenced: Health and Safety Code Sections 39002, 40001, 40406, 40702, 40440(a), and 40725 through 40728.5.

COMPARATIVE ANALYSIS

Under Health and Safety Code Section 40727.2, the South Coast AQMD is required to perform a comparative written analysis when adopting, amending, or repealing a rule or regulation. The comparative analysis is relative to existing federal requirements, existing or proposed South Coast AQMD rules and air pollution control requirements and guidelines which are applicable to supply of organic material, chipping and grinding operations, co-composting operations, and composting operations.

Jurisdiction	South Coast AQMD	State of California	United States
Regulation	PAR 1133 – Emission Reductions from Direct Land Application	No comparable regulation detected	No comparable regulation detected
Applicability	• Chipping and grinding operations • Co-composting operations • Composting operations	Not applicable	Not applicable
Requirements	• Supply uncomposted greenwaste only if allowed by Local Enforcement Agency • May supply uncomposted greenwaste to: ‣ Co-composting operations ‣ Composting operations ‣ Digestion operations ‣ Biomass power generation facilities ‣ Agricultural operations ‣ Outside South Coast AQMD • If supplying uncomposted greenwaste to agricultural operations, recipient must intend to: ‣ Till, inject, or plow uncomposted greenwaste, or ‣ Cover with finished compost or compost overs	Not applicable	Not applicable
Recordkeeping	3-year retention	Not applicable	Not applicable
Prohibitions	May not supply: • Foodwaste • Biosolids • Manure • Digestate, unless recipient intends to: ‣ Till, inject, or plow digestate, or ‣ Cover with finished compost or compost overs	Not applicable	Not applicable

Jurisdiction	South Coast AQMD
Regulation	PAR 1133.1 – Chipping and Grinding Operations
Finding	In accordance with Health and Safety Code 40727.2(g), the amended rule does not impose a new emission limit or standard, make an existing emission limit or standard more stringent, or impose new or more stringent monitoring, reporting, or recordkeeping requirements.

Jurisdiction	South Coast AQMD	State of California	United States
Regulation	PAR 1133.2 – Emission Reductions from Co-composting Operations	California Code of Regulations, Title 14, Chapter 3.1 – Compostable Materials Handling Operations and Facilities Regulatory Requirements	Code of Federal Regulations, Title 40, Part 503 – Standards for the Use or Disposal of Sewage Sludge
Applicability	Co-composting operations	Composting Facilities (all) (e.g. biosolids, digestate, food material, mixed material)	Any person who prepares sewage sludge
Requirements	• Conduct active phase composting within enclosure • Conduct active phase for 22 days, achieve Compost Maturity Index (CMI) of 4.5, or statewide pathogen reduction process • Conduct curing phase for 40 days, achieving CMI 6.0, or achieving respiration rate • Vent enclosure and aeration system to emission control system achieving 80% control for VOC and ammonia or mass emission rate equivalent • Source test emission control system every 2 years	• Pathogen reduction process by conducting active phase for 15 days for windrow composting and for 3 days for aerated static pile composting	• Processes To Significantly Reduce Pathogens (PSRP), acceptable for Class B compost • Processes to Further Reduce Pathogens (PFRP), acceptable for Class A compost, including: ‣ Conduct active phase for 15 days for windrow composting and for 3 days for aerated static pile composting

Jurisdiction	South Coast AQMD	State of California	United States
Regulation *(continued)*	PAR 1133.2 – Emission Reductions from Co-composting Operations	California Code of Regulations, Title 14, Chapter 3.1 – Compostable Materials Handling Operations and Facilities Regulatory Requirements	Code of Federal Regulations, Title 40, Part 503 – Standards for the Use or Disposal of Sewage Sludge
Existing Small-Capacity Co-composting Operation Alternative	In lieu of composting within enclosure, windrow composting best management practices: • Cover top of active phase pile with 6 inches of finished compost or compost overs • Ensure active piles are sufficiently wet prior to turning using squeeze ball test and applying additional water	Not applicable	Not applicable
Publicly-owned Small-capacity Co-composting Alternative	In lieu of composting within enclosure, conduct active and curing phases using aeration system vented to emission control system achieving 80% control for VOC and ammonia or mass emission rate equivalent	Not applicable	Not applicable
Recordkeeping	5-year retention	5-year retention	5-year retention
Reporting	Annual report	Not required	Not required

Jurisdiction	South Coast AQMD
Regulation	PAR 1133.3 – Emission Reductions from Composting Operations
Finding	In accordance with Health and Safety Code 40727.2(g), the amended rule does not impose a new emission limit or standard, make an existing emission limit or standard more stringent, or impose new or more stringent monitoring, reporting, or recordkeeping requirements.

APPENDIX A: SOCIOECONOMIC IMPACT ASSESSMENT

INTRODUCTION

On March 17, 1989, the South Coast AQMD Governing Board adopted a resolution which requires an analysis of the economic impacts associated with adopting and amending rules and regulations. In addition, Health and Safety Code Sections 40440.8 and 40728.5 require a socioeconomic impact assessment for proposed and amended rules resulting in significant impacts to air quality or emission limitations. This Socioeconomic Impact Assessment has been prepared in accordance with Health and Safety Code and South Coast AQMD Governing Board requirements. The type of industries or businesses affected, and the range of probable costs, are addressed in this chapter. Additional information and analysis on the availability and cost-effectiveness of other technologies considered for the BARCT assessment, discussion of potential emission reductions, and the necessity of amending the rule are included elsewhere in this report.

The PAR 1133 Series aims to reduce emissions of VOC and ammonia from composting operations and minimize inadvertent decomposition during chipping and grinding operations. It targets emission reductions from the direct land application of uncomposted greenwaste and will introduce composting best management practices for previously uncontrolled existing co-composting operations. These amendments would fulfill the Most Stringent Measures (MSM) requirements outlined in the federal Clean Air Act (CAA) and the 2024 PM2.5 Plan. The proposed amended rules are also estimated to reduce 2.34 tons per day of VOC emissions and 0.19 ton per day of ammonia emissions. The PAR 1133 Series applies to chipping and grinding operations, co-composting of biosolids and manure, and composting of greenwaste, food waste, and other compostable materials. Roughly 98 facilities within the South Coast AQMD jurisdiction will be affected by the PAR 1133 Series.

LEGISLATIVE MANDATES

The legal mandates directly related to the socioeconomic impact assessment of the PAR 1133 Series include South Coast AQMD Governing Board resolutions and various sections of the Health and Safety Code.

South Coast AQMD Governing Board Resolution

On March 17, 1989, the South Coast AQMD Governing Board adopted a resolution that requires an analysis of the economic impacts associated with adopting and amending rules and regulations that considers all of the following elements:

- Affected industries;
- Range of probable costs;
- Cost-effectiveness of control alternatives; and
- Public health benefits.

Health and Safety Code Requirements

The state legislature adopted legislation which reinforces and expands the South Coast AQMD Governing Board resolution requiring socioeconomic impact assessments for rule development projects. Health and Safety Code Section 40440.8 requires a socioeconomic impact assessment for

any proposed rule, rule amendment, or rule repeal which "will significantly affect air quality or emissions limitations."

To satisfy the requirements in Health and Safety Code Section 40440.8, the scope of the socioeconomic impact assessment should include all of the following information:

- Type of affected industries;
- Impact on employment and the regional economy;
- Range of probable costs, including those to industry;
- Availability and cost-effectiveness of alternatives to the rule;
- Emission reduction potential; and
- Necessity of adopting, amending, or repealing the rule in order to attain state and federal ambient air quality standards.

However, job impact analyses are not conducted for projects with annual costs below one million U.S. dollars, as the modeling tool is unable to accurately assess macroeconomic effects of minimal-scale policy shocks.

Health and Safety Code Section 40728.5 requires the South Coast AQMD Governing Board to: 1) actively consider the socioeconomic impacts of regulations; 2) make a good faith effort to minimize adverse socioeconomic impacts; and 3) include small business impacts. To satisfy the requirements in Health and Safety Code Section 40728.5, the socioeconomic impact assessment should include the following information:

- Type of industries or business affected, including small businesses; and
- Range of probable costs, including costs to industry or business, including small business.

Finally, Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for a proposed rule or amendment which imposes Best Available Retrofit Control Technology (BARCT) or “all feasible measures” requirements relating to emissions of ozone, CO, SOx, NOx, VOC, and their precursors. A cost-effectiveness analysis was conducted for the PAR 1133 Series and can be found in Chapter 2 of this report.

AFFECTED FACILITIES AND INDUSTRIES

The PAR 1133 Series would apply to approximately 98 facilities within the South Coast AQMD jurisdiction classified under various industries per the North American Industry Classification System (NAICS) with 46 facilities in the sector of Administrative and Support and Waste Management and Remediation Services (NAICS 56). In terms of geographical distribution, 30 of the 98 affected facilities are located in Los Angeles County, 26 in Riverside County, 22 in San Bernardino County, and 20 in Orange County.

SMALL BUSINESS ANALYSIS

The South Coast AQMD defines a “small business” in Rule 102 for purposes of fees as one which employs 10 or fewer persons and which earns less than $500,000 in gross annual receipts. The South Coast AQMD also defines “small business” for the purpose of qualifying for access to

services from the South Coast AQMD's Small Business Assistance Office (SBAO) as a business with an annual receipt of $5 million or less, or with 100 or fewer employees. In addition to the South Coast AQMD's definition of a small business, the United States (U.S.) Small Business Administration and the federal 1990 Clean Air Act Amendments (1990 CAAA) each have their own definition of a small business.

The 1990 CAAA classifies a business as a "small business stationary source" if it: 1) employs 100 or fewer employees; 2) does not emit more than 10 tons per year of either VOC or NOx; and 3) is a small business as defined by the U.S. Small Business Administration (SBA). Based on firm revenue and employee count, the U.S. SBA definition of a small business varies by six-digit NAICS codes.[1] For example, a facility with a NAICS code of 562920, is considered a small business if it has an annual revenue of $25 million or less.

South Coast AQMD relies mostly on Dun and Bradstreet data to conduct small business analyses for private companies. In cases where the Dun and Bradstreet data are unavailable or unreliable, other external data sources such as Manta, Hoover, LinkedIn, and company website data will be used. The determination of data reliability is based on data quality confidence codes in the Dun and Bradstreet data as well as staff's discretion. Revenue and employee data for publicly owned companies are gathered from Securities and Exchange Commission (SEC) filings. Since subsidiaries under the same parent company are interest-dependent, the revenue and employee data of a facility's parent company will be used for the determination of its small business status.

Employment and revenue data from the 2024 Dun and Bradstreet database as well as other external sources are available for 93 of the 98 affected facilities. However, 50 facilities do not have VOC or NOx emission data to determine whether they would qualify as a small business under the 1990 CAAA definition. Note that although the employment and revenue data for some facilities are unknown or missing, the current data used for this small business analysis represent the most thorough and accurate information obtainable as of the date of this draft Socioeconomic Impact Assessment. The number of affected facilities classified as small businesses under each definition is shown in Table 1.

Table 1
Number of Small Businesses Under Various Definitions

Small Business Definitions	Number of Facilities
South Coast AQMD Rule 102	0
South Coast AQMD Small Business Assistance Office	72
U.S. Small Business Administration	73
1990 CAAA	13

[1] U.S. Small Business Administration, 2023 Small Business Size Standards, https://www.sba.gov/document/support-table-sizestandards, accessed July 11, 2025.

COMPLIANCE COSTS

Although the PAR 1133 Series is applicable to approximately 98 facilities in the South Coast AQMD region, only 86 facilities are expected to incur compliance costs due to the implementation of the PAR 1133 Series. The remaining 12 facilities are only subject to administrative changes with negligible costs. Of the 86 facilities expected to incur compliance costs, 85 facilities will be subject to the recordkeeping requirements of PAR 1133 only, while only one facility will be subject to both the recordkeeping requirements of PAR 1133 and the best management practices of PAR 1133.2. No new equipment purchases are expected for the implementation of the PAR 1133 Series. The recurring costs associated with the PAR 1133 Series will be analyzed over a 15-year period from 2025 through 2039.[2] All the costs presented in this Socioeconomic Impact Assessment are expressed in 2024 dollars. The assumptions for the cost estimation are outlined in the following section.

Cost Assumptions

Recordkeeping

There are 86 facilities in the South Coast AQMD jurisdiction which supply uncomposted greenwaste offsite and are required to maintain daily records starting in 2025. The analysis assumed 250 operating days per calendar year and 15 minutes per day with an hourly wage rate of $25. With 86 facilities subject to the recordkeeping requirements, the annual cost for this requirement is estimated to be $134,375.

Best Management Practices

Only one facility will be required to apply best management practices to their co-composting activities starting in 2025. The best management practices include covering and watering the piles of composted waste. The facility is expected to have a compost throughput of 35,000 tons per year and the cost of the best management practice is estimated to be $1.73 per ton. Thus, the annual cost for this facility to implement the best management practices is estimated to be $60,500.

Annual Average Compliance Costs

The total present value of the compliance costs of implementing the PAR 1133 Series is estimated to be $2,729,672 and $2,253,942 at a 1% and 4% discount rate, respectively. Since the affected facilities are not expected to purchase any new equipment, the annual average compliance costs only account for recurring costs associated with recordkeeping and implementing best management practices. The average annual compliance costs of implementing the PAR 1133 Series is estimated to be $194,925 regardless of the period and the real interest rates used in the analysis. Table 2 presents both the present value and annual average cost of implementing the PAR 1133 Series.

[2] Note that the annual costs will be the same regardless of analysis period since there would be no capital costs and the starting years for recordkeeping and best management practice will be the same.

Table 2: Total Present Value and Average Annual of Estimated Costs for the PAR 1133 Series

Cost Categories	Present Value (2025)		Annual Average Costs of the PAR 1133 Series (2025-2039)
	1% Discount Rate	4% Discount Rate	
Capital Costs*			
-	-	-	-
Recurring Costs			
Recordkeeping	$1,881,748	$1,553,795	$134,375
Best Management Practices	$847,924	$700,147	$60,550
Total	**$2,729,672**	**$2,253,942**	**$194,925**

*No capital costs are expected because facilities are not anticipated to purchase any new equipment

MACROECONOMIC IMPACTS ON THE REGIONAL ECONOMY

Regional Economic Models, Inc. (REMI) developed the Policy Insight Plus Model (PI+ v3), which is a tool that South Coast AQMD typically uses to assess the impacts of rule development projects on the job market, prices, and other macroeconomic variables in the region when the average annual compliance cost is greater than one million current U.S. dollars.[3] However, when the average annual compliance cost of a project is less than one million, the model cannot reliably determine the macroeconomic impacts, because resultant impacts from the project would be too small relative to the baseline economic forecast.

Since the average annual compliance cost of the PAR 1133 Series is estimated to be $194,925, which is less than the $1 million threshold, a macroeconomic impact analysis was not conducted for the PAR 1133 Series.

[3] Regional Economic Modeling Inc. (REMI). Policy Insight® for the South Coast Area (70-sector model). Version 3. 2023.

APPENDIX B: RESPONSES TO COMMENTS

PUBLIC WORKSHOP COMMENTS

COMMENT LETTERS (4)

City of Los Angeles, Solid Resources Processing & Construction Division

Inland Empire Regional Composting Authority

Orange County, Waste & Recycling

City of Bakersfield Public Works, Solid Waste Division

Public Workshop Comments

Public Workshop Commentor #1 – David Rothbart, Clean Water SoCal

The commentor expressed the following:

1-A) PAR 1133.2 requires enclosure for the active phase of co-composting and doesn't allow other technologies. The commentor would prefer the entire rule to be less prescriptive and instead have an emission reduction requirement.

1-B) PAR 1133.2 now requires triplicate samples for Solvita Compost Maturity Index and oxygen uptake rate and commentor asked why that was necessary.

Staff response to Commentor #1

1-A) In light of the U.S. EPA sanction clock on South Coast AQMD, staff felt reevaluation of the entire rule regulatory structure was not possible. CAPCOA is currently working on revised baseline emission factors. Reevaluation is more appropriate after CAPCOA has completed its review of baseline emission factors.

1-B) Rule 1133.3 already requires triplicate samples for both of those test methods and staff is seeking to standardize and harmonize test methods, definitions, and other elements across the PAR 1133 Series.

Public Workshop Commentor #2 – John Furlong, Yorke Engineering

The commentor expressed the following:

2-A) Does digestate meet the definition of an intermediate material under PAR 1133.

Staff response to Commentor #2

2-A) The definition of intermediate material will be updated to reflect that digestate, if the feedstock was exclusively greenwaste, can be considered an intermediate material if it has completed the pathogen reduction process.

Public Workshop Commentor #3 – Casey Corliss, Orange County Waste & Recycling

The commentor expressed the following:

3-A) Composting is an essential public service and South Coast AQMD rules should reflect that.

Staff response to Commentor #3

3-A) Designation of composting as an essential public service would fall under Regulation XIII – New Source Review and emission offsets, not under the PAR 1133 Series.

Public Workshop Commentor #4 – Neil Edgar, California Compost Coalition

The commentor expressed the following:

4-A) CalRecycle's statewide regulation requires 3 years records retention. The commentor recommends consistency for PAR 1133 with the statewide regulation.

4-B) Is the estimate of quantities of direct land application of uncomposted greenwaste just for South Coast AQMD or does it include outlining areas.

4-C) Statewide, greenwaste is an atypical feedstock for digestion and the commentor has concerns regarding the volatility of digestate and aerobic in-vessel finishing of digestate.

Staff response to Commentor #4

4-A) PAR 1133 will be updated with retention of records for 3 years.

4-B) The estimate is for application within South Coast AQMD. The estimate is based on reporting under Rule 1133, but the current form used to report does not distinguish between use within South Coast AQMD or an outlining area. Staff is committed to updating the reporting forms used in the PAR 1133 Series.

4-C) While not common statewide, staff is aware of a newer greenwaste digestion operation within South Coast AQMD. This rulemaking is not meant to limit that facility's digestion operation or this emerging technology.

Public Workshop Commentor #5 – Don Nguyen, Orange County Sanitation District

The commentor expressed the following:

3-A) Are publicly owned treatment works (POTWs) subject to the prohibition of PAR 1133, restricting direct land application of biosolids.

Staff response to Commentor #5

3-A) POTWs, unless they had co-located operations subject to the PAR 1133 Series, such as a PAR 1133.1 chipping and grinding operation, a PAR 1133.2 co-composting operation, or a PAR 1133.3 composting operation, would not be subject to the prohibition of supplying biosolids for direct land application.

Public Workshop Commentor #1 – Mr. Rothbart

The commentor additionally expressed the following:

1-C) For detection of ammonia outside of enclosures, PAR 1133.2 requires portable ammonia analyzers. Dräger tubes are just as effective and should be allowed, as well as other equally effective methods.

1-D) The commentor supported Commentor #3's request to amend Regulation XIII to identify composting as an essential public service and requested a schedule for amendment.

Staff response to Commentor #1

1-C) PAR 1133.2 will be updated to allow use of colorimetric testing, such as Dräger tubes, or other equally effective methods.

1-D) Staff noted Regulation XIII has been identified for future amendment and is forecasted as "Tentative 2026 Calendar" in the most recent Rule and Control Measure Forecast Report at the time of preparation of this Staff Report.

Public Workshop Commentor #6 – Matthew Cotton, Integrated Waste Management Consulting, LLC

The commentor expressed the following:

6-A) The commentor supports Commentor 1's request to identify composting as an essential public service and Commentor 3's request to amend Regulation XIII.

6-B) The estimate of the direct last application ratio between uncomposted greenwaste versus pathogen-reduced material is not accurate, based on 2019 report prepared by the commentor for CalRecycle, based on statewide surveys of greenwaste facilities.

Staff response to Commentor #6

6-A) Please see response 3-A.

6-B) The Draft Staff Report will be updated to reflect the findings for the 2019 CalRecycle report prepared by the commentor.

Comment Letter #1 – City of Los Angeles, Solid Resources Processing & Construction Division

Areio Soltani

From: Thania Flores Soto <thania.floressoto@lacity.org>
Sent: Tuesday, July 22, 2025 12:00 PM
To: George Kasikarin
Cc: Areio Soltani; Miguel Zermeno; James Greenfield; Michael Kaufman; Andres Covarrubias; Arpa Bahariance; David Thompson; Megan Lee
Subject: [EXTERNAL] Re: SCAQMD 1133 Series Amendments

Thank you so much Mr. Kasikarin. For transparency and collaboration I will share some of our questions in this thread.

Hi Mr. Areio Soltani,

I have been attending the working group meetings on behalf of LA Sanitation and Environment (LASAN). LASAN has three facilities operated and maintained by Solid Resources Processing and Construction Division (SRPCD) which are stated below;

- Harbor Mulching Facility (Harbor) - Mulching Operation
- The Lopez Canyon Environmental Center (LCEC) - Windrow Composting Operation of Greenwaste, Woodwaste, and Manure
- Griffith Park Compost Facility (GPCF) - Windrow with ASP Composting Operation of Greenwaste, Biosolids, and Manure

I have some questions and comments about the draft proposed amendments and would appreciate your response and input.

Proposed Amended Rule 1133 Emissions Reductions From Direct Land Application

Comment 1-1)

1. PAR 1133-3 section (c) Definitions
   a. (c)(14) MANURE definition only describes manure from livestock of domesticated animals. At GPCF we compost the LA Zoo manure, this is not a defined feedstock in the proposed language amendments for any of the 1133 rules.

Comment 1-2)

2. PAR 1133-4 section (d) Requirements
   a. Requirements are applicable to Uncomposted Greenwaste, not Uncomposted Woodwaste which is what LASAN uses for "chip and ship". Uncomposted Woodwaste is not a defined term in regulations.
   b. (d)(2) parks, CalTrans, airports or other government departments or jurisdictions are left out.

Proposed Amended Rule 1133.2 Emissions Reductions From Co-Composting Operations

Comment 1-3)

1. PAR 1133.2 - 1 section (c) Definitions
   a. (c)(17) CO-COMPOST OPERATION describes any facility in operation post 2003 with any Biolosids or 20% or more Manure by volume. How did these guidelines develop to calculate 20%+ Manure ?

Comment 1-4)

2. PAR 1133.2 - 2 section (c) Definitions
   a. (c)(13) EXISTING SMALL-CAPACITY CO-COMPOST OPERATION has limited feedstock to 35,000 tons per year containing no more than 20% biosolids by volume. In the existing Rule 1133.2 there are no limitations to the facilities grandfathered into the

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rule. How did AQMD come to the conclusion that pre-existing facilities prior to 2003 needed to be limited to 35,000 tons and 20% or less of Biosolids by volume?

Comment 1-5)

3. PAR 1133.2 - 7 Section (e) Existing Small- Capacity Operation Alternative
   a. Do sections (e)(4) and (e)(5) dictate that material has been completely composted in 62 days if basing off operating days? Testing can be expensive if Solvita tests are done constantly, is LASAN able to prove its process within a shorter period of time and be allowed to follow strict approved operating guidelines not stated in the proposed rules? Meaning a proved process through an approved SOP by AQMD/LEA.

Comment 1-6)

4. PAR 1133.2 - 12 Section (e) Existing Small- Capacity Operation Alternative
   a. At the moment source testing is completed every 3 years for GPCF and not required for LCEC, proposed changes on rule does not have a schedule for EXISTING SMALL-CAPACITY CO-COMPOST OPERATION. How is the schedule determined under a permitted facility? Based on Rule 1133.3 section (d)(3)(B) testing is required every 3 years for ASP only. Do these rule modifications change anything for LASAN? Does a facility have to abide by 1133.2 and 1133.3? If so, it's contradicting in the applicability language.

Proposed Amended Rule 1133.3 Emissions Reductions From Composing Operations

Comment 1-7)

1. PAR 1133.3 - 2 section (c) Definitions
   a. Definition (c) (9) EXISTING GREENWASTE COMPOSTING OPERATIONS has been removed, meaning all compost facilities not subject to Rule 1133.2 must abide by the requirements. Modified to read as (c)(9) COMPOST OPERATION, this definition does not limit design capacity of throughput nor percent type by feedstock. How does one determine if a facility must abide by 1133.2 or 1133.3 if they are not composting biosolids or composting a small quantity of MANURE? Is it based solely on year of operation?

Comment 1-8)

2. PAR 1133.3 -4 section (d) Requirements
   a. Does section (d)(1)(c) dictate that material has been completely composted in 62 days if basing off days in rule? Testing can be expensive if Solvita tests are done constantly, is LASAN able to prove its process within a shorter period of time and be allowed to follow strict approved operating guidelines not stated in the proposed rules? Meaning a proved process through an approved SOP by AQMD/LEA.

Comment 1-9)

3. PAR 1133.3 -5 section (d)(2) Windrow Composting Best Management Practices
   a. For AER what are the baseline emission factors in Windrow Composting? Currently LASAN AER for LCEC are the following; 1.78 lbs VOC/ton and 2.93 lbs Ammonia/ton. Section (d)(2)(D) is for an alternate to the mitigation measures stated in section (d)(2)(A), (d)(2)(B), and (d)(2)(C), which cap emissions at 2.97 lbs VOC/ton and 0.57 lbs Ammonia/ton based on an approved protocol, these factors are not AER baselines.

Comment 1-10)

4. PAR 1133.3 -7 section (d)(3) Aeration System Vented to Emission Control System
   a. Causing confusion since LASAN's GPCF follows these guidelines which are not stated in Rule 1133.2, and Rule 1133.3 is only applicable if the operator is not subject to Rule 1133.2.

Thank you in advance.
The City may have additional comments or feedback to the Rules and Staff Report, is the deadline still July 23?

Best Regards,

Thania Flores
Environmental Engineering Associate II
LA Sanitation and Environment
Solid Resources Processing & Construction Division (SRPCD)

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Staff Responses to Comment Letter #1

1-1) The definition of manure throughout the PAR 1133 Series has been updated to also reflect waste produced from zoological operations.

1-2) The primary purpose of PAR 1133 is to reduce ammonia emissions from direct land application. Decomposition of woodwaste, because of its low nitrogen content, is not believed to be a significant source of ammonia emissions. Thus, PAR 1133 does not establish requirements or prohibitions on woodwaste for direct land application.

Regarding applicability, PAR 1133 applies to operations subject to Rule 1133.1, Rule 1133.2, or Rule 1133.3. Parks, CalTrans facilities, airports, or other government departments or jurisdictions may be subject to PAR 1133 if they operate chipping and grinding operations, co-composting operations, or composting operations.

1-3) The threshold of more than 20% manure to be considered co-composting was established during the adoption of Rule 1133.2 in 2003. According to the 2003 Staff Report, a stakeholder requested the preliminary draft rule language to be changed to allow "small amounts of manure" to be composted without being considered co-composting operations.

1-4) The definition of an existing small-capacity co-composting operation is based on an exemption established during the adoption of Rule 1133.2 in 2003. According to the minutes of the January 2003 Governing Board meeting, the exemption was added via errata sheet and the basis of the exemption is not elaborated in the Staff Report or other documents. After evaluation, PAR 1133.2 now places limitations and controls on this category of co-composting operations, requiring use of best management practices including covering piles with finished compost or compost overs and piles sufficiently wet prior to turning.

1-5) Solvita testing to demonstrate Compost Maturity Index is not required; it is one compliance path including number of days or, for curing phase, measurement of oxygen uptake. Staff has added a third compliance path for active phase: completion of the pathogen reduction process as outlined in Title 14, Section 17868.3 of the California Code of Regulations.

1-6) Operations meeting the definition of a co-composting operation, composting any amount of biosolids or more than 20% manure, must comply with PAR 1133.2 requiring source testing every two years. Other composting operations must comply with PAR 1133.3 and, if source testing is required, must test every three years. In cases when permit conditions do not agree with rule requirements, the more stringent of the two shall prevail.

1-7) Applicability of PAR 1133.2 or PAR 1133.3 is determined by recordkeeping regarding quantities of biosolids or manure composting feedstock.

1-8) See Response 1-5.

1-9) For guidance regarding Annual Emissions Reporting (AER) for composting operations, refer to *Guidelines for Calculating Emissions from Greenwaste Composting and Co-Composting Operations*[1], revised February 2023.

1-10) Based on a review of records, the referenced co-composting operation meets the definition of a publicly-owned small-capacity co-composting operation and may select the Publicly-owned Small-capacity Co-composting Operation Alternative in subdivision (f) of PAR 1133.2. PAR 1133.3 is not applicable for this co-composting operation.

[1] https://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/greenwaste-and-composting.pdf

Comment Letter #2 – Inland Empire Regional Composting Authority

INLAND EMPIRE REGIONAL COMPOSTING AUTHORITY

12645 6th Street, Rancho Cucamonga, CA 91739
PO Box 2470 Chino Hills, CA 91709
Phone: (909) 993-1500 Fax: (909) 993-1510

Quality Products for Healthy Soil

July 23, 2025

South Coast Air Quality Management District
Planning, Rule Development & Implementation
21865 Copley Dr
Diamond Bar, CA 91765

Subject: Comments on Proposed Amended Rule 1133.2 – Emission Reductions from Co-Composting Operations

Dear Rule 1133 Series Rule Team,

On behalf of Inland Empire Regional Composting Authority (IERCA), I am submitting the enclosed comments regarding SCAQMD's Proposed Amended Rule 1133.2 – Emission Reductions from Co-Composting Operations. We appreciate the opportunity to provide input on this important regulatory proposal.

IERCA is committed to supporting air quality improvements and sustainable biosolids management. We respectfully request the District consider our feedback in the finalization of the rule. Should you have any questions or require clarification, we welcome the opportunity to engage further.

Thank you for your consideration.

Sincerely,

Arin Boughan
Manager of Composting Authority

Enclosure: FINAL PDRL PAR1133.2 with comments final.pdf

Comment 2-1:

aEnclosure shall not exceed two (2) percent2% of the surface area of the eEnclosure's four (4) walls, floor, and ceiling.

(C)(iii) The eEnclosure may be opened for brief time periods, not to exceed a total of 30 minutes per day for purposes of access or maintenance. These time periods do not need to be included in the face velocity determination or as an opening for the two (2) percent criteria.

(D)(iv) No measurable increase over background levels of ammonia or hydrocarbons outside the aEnclosure shall occur at any eEnclosure opening including any opening that occurs briefly for access or maintenance. A portable an(=)nia or hydrocarbon analyzer shall be used for these measurements. The portable ammonia analyzer shall be operated per manufacturer's instructions and calibrated with certified zero and ten (10) parts per million ammonia standards. The portable hydrocarbon analyzer shall be a flame ionization detector operated per manufacturer's instructions and calibrated with certified zero and ten (10) parts per million methane standards. The owner or operator shall monitor each Enclosure opening at least daily and record monitoring result.

PAR 1133.2 - 4

Pcambias
Jul 16

Propose generalizing the specification, as there are currently no legitimate manufacturers producing an analyzer that meets the specified requirements. Alternatively, consider allowing the following language:

"A portable ammonia or hydrocarbon analyzer shall be used for these measurements. The portable ammonia analyzer and the portable hydrocarbon analyzer shall be approved by the South Coast AQMD's Executive Officer, and shall be operated per manufacturer's instructions."

Comment 2-2:

Proposed Amended Rule 1133.2 (cont.) ~~(Adopted January 10, 2002)~~(Amended TBD)

(=) (2) Conduct the Active Phase until meeting at least one of the following criteria:

(A) For a minimum of 22 consecutive calendar days, beginning when Organic Waste Material is mixed together for composting.

(B) The Active Phase Pile has a Compost Maturity Index of 4.5 or greater as measured by the Solvita Maturity Test in accordance with subparagraph (g)(4)(A).

(3)(B) Conduct theall eCuring Phase using an eAeration sSystem vented to an emission control system ~~that operates under negative pressure for no less than 90 percent of its blower(s) operating cycle~~and until meeting at least one of the following criteria:; ~~and.~~

(A) For a minimum of 40 consecutive calendar days after the end of the Active Phase.

(B) The Curing Phase Pile has a Compost Maturity Index of 6.0 or greater as measured by the Solvita Maturity Test in accordance with subparagraph (g)(4)(A).

(C) The Curing Phase Pile respiration rate is below ten (10) milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry in accordance with subparagraph (g)(4)(B).

(4)(C) Vent the exhaust from the eEnclosure and the eAeration sSystem to an emission~~s~~ control system designed and operated that, either:

(A) Meets~~with~~ a eControl eEfficiency equal to or greater than 80 percent, by

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Jul 16

Recommend referencing CalRecycle requirements, as they may change in the future. If the requirements are not aligned, compost facility owners and operators may face challenges in complying with both CalRecycle and SCAQMD regulations. It is also suggested to combine sections (d)(2) and (d)(3) into a single, consolidated section for clarity and consistency.:

"All composting operations subject to this rule shall conduct both the active phase and the curing phase of composting in a manner that is consistent with the applicable requirements established by the California Department of Resources Recycling and Recovery (CalRecycle)."

Comment 2-3:

(i) ReportingPlan Fees

The owner or operator of a Co-composting Operation shall submit to the Executive Officer annually, no later than July 1st of each calendar year, a report summarizing the Co-

PAR 1133.2 - 13

Pcambias
Jul 16

Propose an outline of the requested information or include an example of the report form. This will avoid any confusion on what is expected in the report.

Staff Responses to Comment Letter #2

2-1) PAR 1133.2 has been updated to allow the use of colorimetric testing, such as Dräger tubes, or other equally effective methods approved by the Executive Officer to detect hydrocarbon or ammonia.

2-2) PAR 1133.2 has been updated to align with CalRecycle requirements by providing a third compliance path to identify the end of the active phase of composting: completion of the pathogen reduction process as outlined in Title 14, Section 17868.3 of the California Code of Regulations.

Staff has retained the requirements of the active phase and the curing phase as distinct paragraphs as these are distinct processes and have differing control requirements in PAR 1133.2: enclosure required for the active phase versus no enclosure required for the curing phase.

2-3) The existing Rule 1133 reporting form is available on the South Coast AQMD website[2] and owners and operators should continue to use this published form for reporting. Staff will update the existing reporting form prior to 2026, before the next reporting cycle.

[2] https://www.aqmd.gov/home/rules-compliance/compliance/compliance-notices/forms-by-rule

Comment Letter #3 – Orange County, Waste & Recycling

COUNTY OF ORANGE
OC Waste&Recycling
Our Community. Our Commitment.

Thomas D. Koutroulis, Director
601 N. Ross Street, Fifth Floor
Santa Ana, CA 92701

www.oclandfills.com
Telephone: (714) 834-4000
Fax: (714) 834-4183

July 22, 2025

South Coast Air Quality Management District
Attn: Areio Soltani
21865 East Copley Drive
Diamond Bar, California 91765

Subject: Comments on Proposed Amendments to Rule 1133 and 1302

Dear Mr. Soltani and the Rule 1133 Series Team,

Thank you for the opportunity to comment on the above-mentioned proposed rule amendments. As you may be aware, Orange County Waste & Recycling (OCWR) operates one of the nation's leading integrated solid waste management systems, including three compost greeneries that serve 3.2 million residents and businesses across 34 cities and unincorporated areas. Currently, OCWR has 62 permit applications pending with the South Coast Air Quality Management District (AQMD), 21 of which directly relate to composting operations.

As you know, Senate Bill (SB) 1383 mandates a 75% diversion of organic waste from landfills by 2025. This requirement is not discretionary, it is an essential component of the state's solid waste infrastructure to reduce greenhouse gas emissions. Diverting organics from landfills reduces emissions of federally regulated criteria pollutants and ozone precursors associated with landfill gas, directly supporting AQMD's mission to improve air quality within the Basin.

Organic waste processing facilities, such as compost operations, serve a function comparable to municipal wastewater treatment plants: they manage biological waste streams with significant public health and environmental implications. Many of these facilities are publicly owned or operated, which aligns with the intent of AQMD Rule 1302's prioritization framework and advances regional air quality objectives.

We appreciate AQMD's work to modernize the Rule 1133 series and recognize the complexities involved in balancing emissions control with infrastructure needs. To ensure these amendments achieve both air quality and organics diversion goals, we respectfully offer the following recommendations:

Comment 3-1)

1. Amend Rule 1302 to Designate Organic Waste Processing as an Essential Public Service

Rule 1302 already classifies landfill gas control or processing equipment as an Essential Public Service. AQMD staff has acknowledged that composting equipment is "an integral part of the

landfill operation." Expanding the Essential Public Service designation to include organic processing facilities would yield the following benefits:

- OCWR could install Covered Aerated Static Pile (CASP) systems without incurring millions of dollars in Emission Reduction Credit (ERC) costs. The CASP provides multiple environmental benefits over traditional windrow composting such as reducing emissions and significant water conservation. Currently, air permits are not required for traditional windrow composting, hence no ERCs are needed, and emissions are higher.
- Local jurisdictions would be better positioned to meet SB 1383 diversion mandates without impeding financial impacts. The development of advanced organic waste processing facilities is needed to build the infrastructure required to meet the goals of SB 1383. There is not sufficient capacity using traditional windrow composting to meet current state laws. The enhanced production technologies, such as CASP, must be incorporated to achieve the 75% diversion mandate. Local district can aid compliance by defining organic waste processing facilities as an Essential Public Service.

We respectfully request that Rule 1302 be amended in conjunction with the Rule 1100 series being brought forward to the September 2025 Governing Board Meeting. We further request the addition of the following rule language:

Rule 1302(m) ESSENTIAL PUBLIC SERVICE includes:
(1) sewage treatment facilities, which are publicly owned or operated, and consistent with an approved regional growth plan;
(2) prisons;
(3) police facilities;
(4) fire-fighting facilities;
(5) schools;
(6) hospitals;
(7) construction and operation of landfills, landfill gas processing facilities, and/or organic waste processing facilities;
(8) water delivery operations; and,
(9) public transit.

Comment 3-2)

2. Ensure Transparent and Defensible Emission Factors in Rule 1133.3

AQMD has indicated that emissions factors for Rule 1133.3 should be "conservative." However, the current VOC factor appears to be based on limited data from a single facility referenced in a 2002 Technology Assessment.

To support sound permitting decisions and stakeholder confidence, the County requests the following:

- A full citation for the current VOC emission factor, including sample size, methodology, and measurement protocols.
- A description of any updates, validations, or peer reviews conducted since 2002.

- Publication of a range of emission factors (minimum, average, and maximum) to allow for site-specific emissions testing where appropriate.

A more transparent and data-driven approach to emissions factors will enhance confidence, reduce permit delays, and encourage investment in emissions-reducing technologies.

Thank you again for the opportunity to provide comments during this rule amendment process. OCWR is happy to collaborate with AQMD staff to refine these rule amendments. We appreciate your commitment to public health and environmental protection and look forward to working together to ensure that local organic waste processing infrastructure evolves in an environmentally beneficial manner.

Sincerely,

Tom Koutroulis
Director
Orange County Waste & Recycling

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Staff Responses to Comment Letter #3

3-1) Staff appreciates the feedback regarding amending Rule 1302. These comments are outside of the scope of this PAR 1133 Series rulemaking. When Regulation XIII is opened for amendment, this request would be considered at that time.

3-2) Staff agrees that emission factors and their bases should be transparent and data-driven. The existing baseline emission factors in the Rule 1133 Series are supported by the 2003 Staff Report for Rule 1133.2 and the 2011 Staff Report for Rule 1133.3, approved by the South Coast AQMD Governing Board after a public process that included a Public Workshop and Public Hearing. Two other key factors are worth noting: 1) CAPCOA, a group South Coast AQMD is a member, is currently studying baseline emission factors and has not completed their statewide review; and 2) South Coast AQMD has been placed under a sanction clock to implement MSM with respect to PM2.5, including amending the Rule 1133 Series. Because of this ongoing work and limited time, staff has decided to leave the existing baseline emission factors in place, but will amend the Rule 1133 Series again after CAPCOA has completed their review and South Coast AQMD has implemented MSM to retire the sanction clock.

Comment Letter #4 – City of Bakersfield Public Works, Solid Waste Division

BAKERSFIELD

4104 Truxtun Ave, Bakersfield, CA 93309 / P 661.326.3136

7/23/2025

Areio Soltani
Planning, Rule Development and Implementation
South Coast Air Quality Management District (SCAQMD)
21865 Copley Drive
Diamond Bar, CA 91765

Re: Proposed Amended Rule 1133

Dear Areio:

The City of Bakersfield appreciates the opportunity to comment on SCAQMD's proposed amended rule (PAR) 1133 series. Although the City does not operate with SCAQMD jurisdiction, there is a long tradition of emission control rules being exchanged between California air districts. Ideas and requirements developed in this rulemaking are likely to be adopted by San Joaquin Valley Air Pollution Control District, at which point they would affect City operations. Therefore, the City considers itself a stakeholder to the PAR 1133 rulemaking despite the jurisdictional difference.

The City of Bakersfield Public Works Division operates the Mt. Vernon Organics, Recycling and Composting Facility which operates under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD) under facility ID S-2843. The facility is a consolidated organic waste recycling and composting operation serving the entire City of Bakersfield and much of the remainder of Kern County; in 2024 it processed 32,830 tons of woodchips for direct land application without further processing. The City wishes to express concerns relative to SCAQMD's June 20, 2025 rule drafts. The City has detailed its concerns and recommendations below. These concerns generally root from a lack of precision in the proposed definitions of "greenwaste" and "woodwaste" that risk entangling traditional woodwaste handling operations in proposed requirements that do not appear to be intended to include them.

Comment 4-1)

Concerns with Definitions

"Woodwaste"

With the current proposed rulemaking, PAR 1133(c) defines Woodwaste as:

> *"Lumber, and the woody material portion of mixed demolition wasted and mixed construction wastes. Large woody materials, such as tree trimmings, branches, tree trunks, stumps, and limbs exceeding two (2) inches in any dimension may be classified as Woodwaste instead of Greenwaste, if they are free of leaves, berries, pine needles, and other non-woody materials."*

This definition is flawed because the "free of" clause would mean any incidental inclusion of greenery would classify the stream as Greenwaste. In the waste and recycling industries, reality is that there is no such thing as a pure waste stream. The current wording implies that a tree could be

stripped of most branches, leaves, or needles, then the trunk and major limbs ground in a chipper, and the whole stream could be defined as greenwaste due to the incidental inclusion of a few leaves, berries, or pine needles that would not be consequential to the overall mass. Great care needs to be put into this definition, as defining that mass of waste as greenwaste would trigger Pathogen Reduction requirements on a waste stream that is principally woodwaste and would not traditionally have been composted.

There are a variety of generalized and facility-specific reasons composting of woodwaste would be a negative to the entire state's ability to comply with SB 1383 organic waste recycling requirements in general, as well as the specific operations of the Bakersfield facility:

1. Incremental composting would result in large increases in VOC and NH3 emissions
2. Woodwaste itself is largely incompatible with composting, as composting requires a balance in nitrogenous (herbaceous, aka "green") and carbonaceous (woody, aka "brown") wastes. In the absence of an appropriate balance, pathogen reduction will not be achieved. At many waste handling operations, an appropriate balance of green waste may not be available to balance a large influx of incremental woodwaste composting.
3. Disrupt the operation of wood waste recycling operations by transforming them into composting operations, requiring large increases in utilization of space, labor, diesel-powered mobile equipment operating hours, and water
4. The above resource utilization changes impose large operating cost burdens on organics recyclers, including municipal operations
5. Requiring pathogen reduction of wood chip production operations changes their product from mulch to compost, which is a completely different end product.

An overly restrictive definition of woodwaste will be impracticable to implement in practice and negate the rulemaking's intent to achieve net emissions reduction. Incremental composting of greenwaste can achieve emission reductions; incremental composting of woodwaste will cause net emission increases. And imposing excessive sorting burdens on the industry will cause costs that discourage collection and use of organic waste, which will cause it to be abandoned in place in an unmanaged state that will also be a net emissions increase.

Further, use of a 2" diameter cutoff for the difference between woodwaste and greenwaste is unworkable. Once a tree trunk has been processed through a wood chipper, there will be no pieces larger than 2". But such a wood chipping process does not transform the tree trunk from woody material into herbaceous material primed for rapid decay. Therefore, the dimensions of the woody material cannot be determinative for woodwaste versus greenwaste; the rule needs to define that split in a manner that is intrinsic to the material itself.

In contrast SJVAPCD Rule 4566 defines Wood Material as

> *"untreated lumber and the woody-material portion of mixed-demolition wasted and mixed-construction wastes. Wood material also includes over, and the woody material portion of trees. Wood material or wood material chips to which other organic material has been added are not considered to be wood material."*

And to clarify, it also defines Overs as

> *"the oversized woody materials that have been through pathogen reduction, do not decompose in a typical composting cycle, and are screened out of finished product at the end of composting."*

According to the SJVAPCD definition, only wood material which has other green material added to it is not considered wood material. This, however, would not include leaves, pine needles, berries, etc. which could be included in wood material as an incidental inclusion. By this definition if a facility were to receive tree trimmings which included leaves it would still be considered wood material. This wording implies a greater allowance for incidental impurities in the material stream and has proven workable in practice.

Additionally, per SJVAPCD Rule 4566 Section 4.1.3 Wood Material is exempt from all requirements of the rule assuming the operator ensures the material is not mixed with other organic materials and maintains records required by Section 6.3.1. It is unclear what benefit is incurred by having PAR 1133.1 be applicable to a woodwaste chipping operation that does not process greenwaste.

Recommendation: The proposed woodwaste definition needs to be modified to allow for incidental greenwaste content based on real-world levels of material separation, and do so in a manner that cannot be negated or changed merely by chipping woodwaste into smaller particles. Further, PAR 1133.1 should include a full exemption for operations that process only woodwaste; this will eliminate the unnecessary burden of keeping records of greenwaste throughputs that are constantly zero.

Comment 4-2)

"Active Phase"

SCAQMD PAR 1133 defines Active Phase as:

> *"...the portion of the composting process characterized by rapid decomposition and biological instability, generating temperatures of at least 122 degrees Fahrenheit. The Active Phase includes the Pathogen Reduction process".*

Recommendation: SCAQMD change the required minimum temperature of 122 degrees Fahrenheit to 131 degrees Fahrenheit to maintain consistency with state regulations in 14 CCR, Division 7 Section 17868.3 – Pathogen Reduction.

Comment 4-3)

Potential Implications of Over-Broad Definition of Woodwaste

Were the 6/20/2025 definition to carry over and later be interpreted strictly, the infeasibility of sorting wood waste streams to perfectly exclude incidental greenwaste would risk causing all woodwaste to be composted. The incremental composting volume would have major implications for solid waste systems throughout SCAQMD jurisdiction. The following sections use City of Bakersfield data as illustrative of the concern.

Emissions Increases

As previously mentioned, the current proposed definition of Woodwaste is concerning in that it has the potential to require composting of many traditional wood waste streams that are otherwise not composted. The incremental composting volumes potentially triggered by this rulemaking have the potential to completely negate the emissions reductions envisioned through additional regulation of greenwaste handling. Based on the 6/20/2025 proposed definition, using the City's facility as an example, there would be an increase in annual facility emissions for the reasons listed below:

- Windrow Emissions
  - Increases in PM emissions from additional material handling

- Increase in VOC and NH3 emissions from incremental composting of wood wastes that contain incidental greenwaste. **The emissions increases that would result from a requirement for the City to compost all wood waste it normally processes and distributes as wood chips are estimated at 70 tons per year of VOC and 24 tons per year of NH3.**

- Equipment Emissions
  - CAT 950 Loader
    - Increase in VOC, NOx, PM, and CO emissions from additional equipment run hours to compost wood waste
  - SCARAB Windrow Turner
    - Increase in VOC, NOx, PM, and CO emissions from additional equipment run hours to compost wood waste
  - Water Truck
    - Increase in VOC, NOx, PM, and CO emissions from additional equipment run hours to compost wood waste

An estimate of emissions increased due to incremental composting of Woodwaste requirements is shown in **Appendix A.**

Recommendation: Modify PAR 1133 definition of Woodwaste to ensure the intended greenwaste emission reductions are not negated by emission increases from incremental composting of wood chips that were not historically composted.

Comment 4-4)

Increased Operating Costs and Non-Air Impacts

The City has multiple concerns in terms of increased operating costs at its own facility associated the potential need to compost woodwastes due to imperfect separation of green and wood components. New costs and other impacts associated with a potential need to compost the City's entire wood waste stream are summarized below, with a more detailed analysis provided in **Appendix B.**

- Facility Expansion
  - Incremental woodwaste composting would require procurement of additional land for composting space requirements
    - This would require approximately:
      - 49 additional acres
      - Estimated cost of $10,000 per acre
      - Total expansion cost of ~ $486,000
- Employee Wages
  - Facility expansion would require hiring additional employees to perform composting on wood waste stream
    - The total annual salary (including City-paid benefits) of each employee has an estimated value of:
      - Service Maintenance Worker
        - $87,092
      - Solid Waste Equipment Operator
        - $102,561
      - Facility Worker
        - $80,374
- Incremental Equipment Operating Costs

- CAT 950 Loader (8 hours/day, including fuel)
  - $295 per day
- SCARAB Windrow Turner (5 hours/day, including fuel)
  - $437 per day
- F-250 Pickup (8 hours/day, including fuel)
  - $54 per day
- Kenworth Water Truck (8 hours/day, including fuel)
  - $114 per day
  - Requires a minimum of 10,000 gallons of water/turn
    - 5 turns minimum to achieve pathogen reduction
    - 600 tons per windrow
    - Water cost $18.72 per 10,000 gallons
- Total Costs
  - $928,831/year for all incremental windrows composting wood waste
- Incremental Water Consumption
  - $\frac{10{,}000\ gal}{turn-windrow} \times \frac{5\ turns}{15\ days} \times \frac{365\ days}{1\ year} \times 55\ New\ Windrows = 66{,}916{,}667\ \frac{gal}{year}$

- Feasibility Concern
  - If impure woodwaste streams are defined as greenwaste, and greenwaste is subject to a requirement to start composting within 3 days of receipt, there a feasibility conflict develops between Best Available Control Technology requirements and the requirement to start composting within 3 days. If a municipal program is to live within a 3 day window, they need to start at least two new windrows per week, every week of the year, so that an active composting is always starting within a few days. However, BACT requires aerated static pile composting, which is not suited to starting small piles frequently due to the fixed length of ASP and the capital needed to build out individual ASP rows.

Recommendation: The proposed woodwaste definition needs to be modified to allow for incidental greenwaste content based on real-world levels of material separation, and do so in a manner that cannot be negated or changed merely by chipping woodwaste into smaller particles. Without this allowance Pathogen Reduction requirements make it financially infeasible for a facility with operations that process Woodwaste only as demonstrated above.

Comment 4-5)

CEQA Implications

The typical CEQA exemption for District rulemaking is dependent on rulemakings only causing emission reductions, without emission increases. Causing incremental composting of wood wastes is a significant environmental harm that in our eyes would require CEQA review.

Furthermore, this proposed rulemaking has direct socioeconomic effects which could indirectly lead to avoidable environmental degradation. Due to the implications of the rule surrounding Woodwaste it would not be cost effective for a facility to expand its operation to fulfill Pathogen Reduction requirements, especially a facility which was not previously further processing Woodwaste post chipping and grinding. This may result in the facility reducing the amount of total waste which it can accept leading to disruption in waste streams and composted material distribution.

Conclusion

The City of Bakersfield urges PAR 1133 authors to carefully consider the practical implications of any alteration of the prevailing division between industry interpretation of green waste and wood waste. The recommendations to the concerns identified would require minimal reconsideration but will prove to have a great impact on all facilities which are subject to the Rule.

The City appreciates consideration of all its comments and recommendations and is happy to discuss further with SCAQMD for any necessary clarification.

Sincerely,

James Leonard

James Leonard
Director of Operations
City of Bakersfield Public Works – Solid Waste Division

Cc: Brian Friday – City of Bakersfield Public Works, Solid Waste Division
Wes Younger, Aaron Jones – Trinity Consultants

Appendix A. Emissions Increases

Appendix A

1. Annual Emissions Increase by Unit

Unit	VOC	NOx	PM	CO	NH3
CAT C7.1 Tier 4 Final (2017) - Diesel	0.16	0.33	0.02	2.90	-
John Deere 18.0L 700hp	0.73	1.54	0.08	13.49	-
Cummins ISX12N	0.42	0.88	0.04	7.71	-
22. Windrow Emissions	70.09	-	0.01	-	23.64
Total	71.40	2.75	0.14	24.10	23.64

Appendix A

2. CAT 950 Loader

CAT C7.1 Tier 4 Final (2017) - Diesel	
225	kW
2.5	hrs (per windrow)

3. Non-Road Compression Ignition 130<kW<225

NMHC (g/kW-hr)	NMHC+NOx (g/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)	CO (g/kW-hr)
0.19	-	0.4	0.02	3.5

4. Emissions per Windrow (lbs)

NMHC	NMHC+NOx	NOx	PM	CO
0.24	-	0.50	0.02	4.34

5. Total Emissions (tons per 15 day period)

NMHC	NMHC+NOx	NOx	PM	CO
0.01	-	0.01	0.00	0.12

6. Total Emissions (tons per year)

NMHC	NMHC+NOx	NOx	PM	CO
0.16	-	0.33	0.02	2.90

Appendix A

7. SCARAB Windrow Turner

John Deere 18.0L 700hp	
522.39	kW
5	hrs (per windrow)

8. Non-Road Compression Ignition 450<kW<560

NMHC (g/kW-hr)	NMHC+NOx (g/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)	CO (g/kW-hr)
0.19	-	0.4	0.02	3.5

9. Emissions per Windrow (lbs)

NMHC	NMHC+NOx	NOx	PM	CO
1.09	-	2.30	0.12	20.15

10. Total Emissions (tons per 15 day period)

NMHC	NMHC+NOx	NOx	PM	CO
0.03	-	0.06	0.00	0.55

11. Total Emissions (tons per year)

NMHC	NMHC+NOx	NOx	PM	CO
0.73	-	1.54	0.08	13.49

Appendix A

12. Peterbilt Water Truck

Cummins ISX12N	
298.5075	kW
5	hrs (per windrow)

13. Non-Road Compression Ignition 225<kW<450

NMHC (g/kW-hr)	NMHC+NOx (g/kW-hr)	NOx (g/kW-hr)	PM (g/kW-hr)	CO (g/kW-hr)
0.19	-	0.4	0.02	3.5

14. Emissions per Windrow (lbs)

NMHC	NMHC+NOx	NOx	PM	CO
0.63	-	1.32	0.07	11.52

15. Total Emissions (tons per 15 day period)

NMHC	NMHC+NOx	NOx	PM	CO
0.02	-	0.04	0.00	0.32

16. Total Emissions (tons per year)

NMHC	NMHC+NOx	NOx	PM	CO
0.42	-	0.88	0.04	7.71

Appendix A

17. Windrow Dimensions

Windrow Dimensions				
L	900.00	ft	300.00	yd
W	24.00	ft	8.00	yd
H	10.00	ft	3.33	yd
Volume (per windrow)	72,000.00	ft3	2,666.67	yd^3
Volume (total)	3,960,000.00	ft3	146,666.67	yd^3

18. Tonnage per Windrow

0.225	ton/yd^3
600	tons per windrow

19. 2024 Outbound Woodchip Totals

1. Land application without further processing (tonnage subject to pathogen reduction per year)	32,830.00	Tons
2. Woodchips processed further (non-land application)	18,614.00	Tons
3. Total Tons (based on truck scale weights; excludes small cubic yard sales)	52,493.00	Tons
4. Sum of 1 and 2	51,444.00	Tons
5. Small Cubic Yard Sales (Difference of 3 and 4)	1,049.00	Tons

20. New Acreage Required

New Windrows Required	55	Windrows
Windrows Spacing (All Sides)	9	ft
Required Length	918	ft
Required Width	42	ft
Area Required (Each Windrow)	38,556.00	ft^2
Area Required (Total Windrows)	2,120,580.00	ft^2
	48.68	Acres

21. Windrow Emission Factors

PM10 (lb/ton)	VOC (lb/ton)	NH3 (lb/ton)
0.00033	4.27	1.44

22. Windrow Emissions

PM10 (tons/yr)	VOC (tons/yr)	NH3 (tons/yr)
0.01	70.09	23.64

Notes:
Assumes 32,830 tons from material subject to Pathogen Reduction

Appendix B. Cost Increases

Appendix B

1. Service Maintenance Worker

Salary	$49,148.74
Blue Shield HMO Access + 2 party	$13,629.62
Group Life $30K	$54.22
PPO Vision 2 Party	$54.08
UC PPO 2 Party	$782.34
Workers Comp	6,983.00
Medicare	$712.66
Per/Misc Emp	$15,727.60
Total	$87,092.26

3. Facility Worker

Salary	$44,114.72
Blue Shield HMO Access + 2 party	$13,629.62
Group Life $30K	$54.22
PPO Vision 2 Party	$54.08
UC PPO 2 Party	$782.34
Workers Comp	6,983.00
Medicare	$639.66
Per/Misc Emp	$14,116.71
Total	$80,374.35

2. Solid Waste Equipment Operator

Salary	$60,740.16
Blue Shield HMO Access + 2 party	$13,629.62
Group Life $30K	$54.22
PPO Vision 2 Party	$54.08
UC PPO 2 Party	$782.34
Workers Comp	6,983.00
Medicare	$880.73
Per/Misc Emp	$19,436.85
Total	$102,561.00

Appendix B

4. New Acreage Required

New Windrows Required	55.00	Windrows
Windrows Spacing (All Sides)	9.00	ft
Required Length	918.00	ft
Required Width	42.00	ft
Area Required (Each Windrow)	38,556.00	ft^2
Area Required (Total Windrows)	2,120,580.00	ft^2
	48.68	Acres
Cost per acre ~	$10,000	
Total Cost ~	$486,816.23	

Appendix B

5. Equipment Operating Cost Summary

Equipment	Cost/Day ($)	Required Units/15 Day Period	Actual Cost/Day of Operation ($)
CAT 950 Loader[1,3]	295.00	2.50	92.19
SCARAB Windrow Turner[2,3]	437.00	5.00	437.00
F250 Pickup[1,3]	54.00	-	-
Kenworth Water Truck[1,3]	114.00	5.00	71.25
> 10,000 Gallons of Water (Per windrow per turn)[3,4,5,6]	18.72	5.00	93.58
Cost Per Windrow - 15 Day Period	-	-	694.02
Cost Per Windrow - Year	-	-	16,887.83
Total Cost Per Year	-	-	928,830.62

1. Based on 8 hours/day average
2. Based on 5 hours/day average
3. Minimum required hours/15 day period
4. Minimum required application of 10,000 gallons of water/15 day period
5. $1.40 per 100 cubic ft/month
6. 1 Cubic ft = 7.48 gallons

Staff Responses to Comment Letter #4

4-1) Staff has updated the definitions of greenwaste and woodwaste by removing the "free of" clause to ensure incidental inclusion of greenery does not classify woodwaste as greenwaste.

Regarding the 2" diameter cutoff, staff has also updated these definitions to use a 4" diameter cutoff. According to CalRecycle publication #500-94-017, updated April 2011[3]: "However, the size of the processing equipment does limit how large a piece of wood a processor can accept. A small chipper can usually handle pieces up to four inches in diameter and of various lengths. Large tub grinders may handle up to eight inches in diameter and six feet long." This assertion is consistent with staff site visits to greenwaste processing facilities with some pre-chipped and ground material arriving while larger branches, stumps, and tree trunks arriving intact or cut into segments.

A 4" diameter cutoff also aligns with statewide waste characterization material types[4]: type "Pruning and Trimmings" is described as:

Prunings and Trimmings means woody plant material up to 4 inches in diameter from any public or private landscape. Examples include prunings, shrubs, and small branches with branch diameters that do not exceed 4 inches. This type does not include stumps, tree trunks, branches exceeding 4 inches in diameter, or material from agricultural sources.

Type "Branches and Stumps" is described as:

Branches and Stumps means woody plant material, branches, and stumps that exceed 4 inches in diameter, from any public or private landscape.

Thus, a chipping and grinding operation, if it chose, could select arriving branches, stumps, and tree trunks, and characterize those as woodwaste from its arriving pre-chipped and ground material or other prunings and trimmings, defined as greenwaste. As the average human hand has a width of 4", characterization could be performed simultaneously with sorting. Alternatively, chipping and grinding operations also may process incoming large branches, stumps, and tree trunks with prunings, trimmings, and greens and characterize all as greenwaste.

Regarding woodwaste chipping and grinding operations, these types of operations are exempt from requirements of PAR 1133.1 except for recordkeeping, in order to demonstrate that they are indeed a woodwaste chipping and grinding operation.

4-2) See Response 2-2 regarding pathogen reduction process pathway.

[3] https://www2.calrecycle.ca.gov/Publications/Details/268
[4] https://www2.calrecycle.ca.gov/WasteCharacterization/MaterialType

4-3) See Response 4-1 regarding incidental greenery in woodwaste.

Regarding potential impacts on the City of Bakersfield Mt. Vernon Organics, Recycling and Composting Facility if the San Joaquin Valley Air Pollution Control District were to adopt rules similar to the PAR 1133 Series, the comment letter states: "As previously mentioned, the current proposed definition of Woodwaste is concerning in that it has the potential to require composting of many traditional wood waste streams that are otherwise not composted." This is inaccurate. The PAR 1133 Series does not require any greenwaste (or woodwaste characterized as greenwaste) to be composted. PAR 1133 requires uncomposted greenwaste, if supplied to agricultural operations for direct land application, be supplied to recipients who intend to either: 1) incorporate into land via tilling, injecting, or plowing to a depth of six inches; or 2) cover with at least six inches finished compost or compost overs. These requirements are consistent with the California Code of Regulations, Title 14, Division 7, Chapter 3.1, Section 17862.4 Land Application Requirements that require land incorporation of compostable material and/or digestate within 30 days or be considered a disposal site.

4-4) See Response 4-3.

4-5) The comment requests that South Coast AQMD conduct a CEQA analysis to account for "incremental composting of wood wastes" that may occur as a result of implementing the PAR 1133 Series. The comment also claims that the PAR 1133 Series will have "direct socioeconomic effects which could indirectly lead to avoidable environmental degradation."

However, as explained in Response 4-3, the PAR 1133 Series does not require any greenwaste (or woodwaste characterized as greenwaste) to be composted which means that no incremental composting will occur. Response 4-3 also lists the requirements for uncomposted greenwaste in the event it is supplied to agricultural operations for direct land application. A CEQA review was conducted for the PAR 1133 Series, which is designed to achieve VOC and ammonia emission reductions, and the analysis concluded that the affected facilities will be able to utilize best management practices when composting, chipping, and grinding, without having to make physical modifications that would cause adverse environmental impacts. Thus, the PAR 1133 Series qualifies for an exemption from CEQA.

Relative to the claim that the proposed project will have direct socioeconomic effects that could indirectly lead to environmental degradation, a Socioeconomic Impact Assessment has been conducted which is included in Appendix A of this Staff Report. None of the socioeconomic impacts identified, however, will lead to environmental degradation because the PAR 1133 Series does not require any organic waste material to complete the pathogen reduction process. PAR 1133 describes intermediate material, greenwaste that has completed the pathogen reduction process, as one of several pathways for greenwaste, as well as composting, co-composting, digestion, biomass power generation, direct land application with restrictions consistent with CalRecycle statewide regulations, or transport outside South Coast AQMD.

Further, as set forth in CEQA Guidelines Section 15131, economic or social information may be included in a CEQA analysis or may be presented in whatever form the agency desires. South Coast AQMD practice is to address the economic effects of proposed projects in the Socioeconomic Impact Assessment, and not in the CEQA analysis, because economic effects typically do not cause environmental impacts. Further, pursuant to CEQA Guidelines Section 15131(a), the economic or social effects of a project shall not be treated as significant effects on the environment. A CEQA document may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes. [CEQA Guidelines Section 15131(a)] Public Resources Code Sections 21100 and 21151 also state that significant effects are limited to physical conditions. No direct or indirect economic or social effects that could cause physical impacts to the environment were identified as a result of implementing the PAR 1133 Series.