



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

Rule 1133 – Composting and Related Operations - General Administrative Requirements

Rule 1133.1 – Chipping and Grinding Activities

Rule 1133.2 – Emission Reductions from Co-Composting Operations

Rule 1133.3 – Emission Reductions from Greenwaste Composting Operations

PUBLIC WORKSHOP

WEDNESDAY JULY 9, 2025 – 10:00 AM

Zoom Meeting: <https://scaqmd.zoom.us/j/96768220758>

Meeting ID: 967 6822 0758

Agenda

Background

Proposed Amended Rule (PAR) 1133 Series Key Definitions

PAR 1133 – Emission Reductions from Direct Land Application

PAR 1133.1 – Chipping and Grinding Operations

PAR 1133.2 – Emission Reductions from Co-composting Operations

PAR 1133.3 – Emission Reductions from Composting Operations

Impact Assessments

Next Steps

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Background

- The South Coast Air Basin is classified as “serious” nonattainment for the 2012 annual PM_{2.5} National Ambient Air Quality Standard (12 µg/m³)

2017

Attainment plan
submitted to
U.S. EPA

2020

U.S. EPA
requested
supplemental
attainment
demonstration
based on new
near-road data

2023

Submitted plan
withdrawn to
avoid potential
disapproval

Early 2024

A finding of
failure to submit
an attainment
plan started a
sanction clock

June 2024

Governing Board
approved the
PM_{2.5} Attainment
Plan that includes
an attainment
date extension
request

PM2.5 Attainment Plan Control Measures

- Clean Air Act requires an area seeking an attainment date extension to demonstrate that its rules are at least as stringent as those in any other air district or state (i.e., Most Stringent Measures)
- 2024 PM2.5 Attainment Plan relies on emissions reductions from previous AQMPs and committed to amending four rule amendments as MSMs



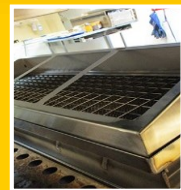
Rule 223 – Requirements for Confined Animal Facilities



Rule 445 – Wood-Burning Devices



Rule 1133 Series – Composting and Related Operations



Rule 1138 – Control of Emissions From Restaurant Operations

Clean Air Act Requirements



- Based on the previous U.S. EPA finding, the South Coast Air Basin had a sanction clock that was supposed to toll August 29, 2025
 - Sanctions may result in more stringent emission offset requirements for permitting new or modified equipment that have emission increases and the loss of federal highway funding
 - Current emission offset ratio of 1.2 to 1 may increase to 2 to 1 (i.e. two pounds of emission offsets would be required for every one pound of emission increase)
- Sanction clock is tied to adoption of the four rules to address Most Stringent Measures (MSM) requirement by September
- BCM-10 from the PM2.5 Plan identified as MSM

Best Control Measure-10 (BCM-10)

- Purpose is to reduce ammonia and VOC emissions, precursors to PM_{2.5}, from direct land application (DLA) of uncomposted greenwaste
- Approach is to regulate supply of uncomposted greenwaste for DLA
- Implemented by incorporating DLA supply restrictions
 - Enhanced recordkeeping by suppliers required



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Key Definitions – Direct Land Application



Uncomposted Greenwaste

- Has not completed pathogen reduction process

Intermediate Material*

- Pathogen-reduced land cover or similar products

Finished Compost

- Completed both active phase and curing phase of composting

** Received feedback regarding intermediate material and digestate*

Key Definitions – Processes

Active Phase, Curing Phase

- Moved timeframes and standards to Requirement subdivisions

Existing Small-capacity Co-composting Operation

- Newly defined term to describe legacy co-composters, previously described in Rule 1133.2 Exemptions

Public-owned Small-capacity Co-composting Operation

- Newly defined term, previously described as “municipal” in Rule 1133.2 Exemptions



Key Definitions – Materials



Greenwaste

- Revised to include food scrap co-collected with curbside greenwaste and exclude woody waste if free of leaves*

Woodwaste

- Revised to include woody parts of greenwaste if free of leaves*

Foodwaste

- Revised to clarify food scraps in curbside greenwaste

** Received feedback regarding presence of leaves in woodwaste*

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Next Steps

Background on Rule 1133

- Purpose was to gather information regarding the compostable waste industry via registration and annual updates
- Received feedback that current rule structure is confusing
- Information gathering elements to be improved and moved to operation-specific rules
 - Registration process eliminated and “annual updates” renamed as “reporting”
- Rule 1133 repurposed to implement BCM-10



Most Stringent Measure Amendment

Direct Land Application (DLA) Restriction

- Requires suppliers for uncomposted greenwaste for DLA applications to supply to either:
 - **Option 1:** Till, inject, or plow 6” deep
 - **Option 2:** Cover with 6” finished compost
- Applies to estimated 86 supplying facilities

Enforcement Mechanism – Recordkeeping

- Documentation kept onsite of supplier for 2 years

Other uses of uncomposted greenwaste are not affected by supply restriction:



Composting Operations



- Digestion
- Biomass Power Generation



Co-composting Operations



Outside of South Coast AQMD

Additional Elements of PAR 1133

- Subdivision **(e) Recordkeeping**
 - Demonstrate compliance with uncomposted greenwaste restrictions
 - Maintain onsite for 2 years
- Subdivision **(f) Prohibitions**
 - May not supply foodwaste, biosolids, digestate*, or manure to direct land application
- Subdivision **(g) Exemptions**
 - Less than 100 tons of uncomposted greenwaste supplied per year

** Received feedback regarding prohibition of direct land application of digestate and considering removing or modifying this prohibition*



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Background on Rule 1133.1

- Purpose is to prevent inadvertent decomposition at chipping and grinding operations
- Received feedback that certain exceptions and pathways were inconsistent with statewide regulations
- Recordkeeping organization inconsistent with other rules in series
 - Previously included with rule requirements
- Reporting to be improved
 - Previously located in separate rule (Rule 1133)



Summary of Changes for PAR 1133.1



- Subdivision **(d) Requirements** largely unchanged
- Existing recordkeeping requirements now located in subdivision **(e) Recordkeeping**
- Annual reporting, formerly known as Annual Update in Rule 1133, now in subdivision **(f) Reporting**
- **(g) Exemptions**, formerly subdivision (f), updated:
 - Exemption lowered from 1,000 cubic yards (237 tons by conversion factor) to 100 tons per year
 - Removed palm exemption
 - Removed low moisture content exemption
- Moisture content measurement, located in former subdivision (e) and no longer needed, deleted

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Background on Rule 1133.2

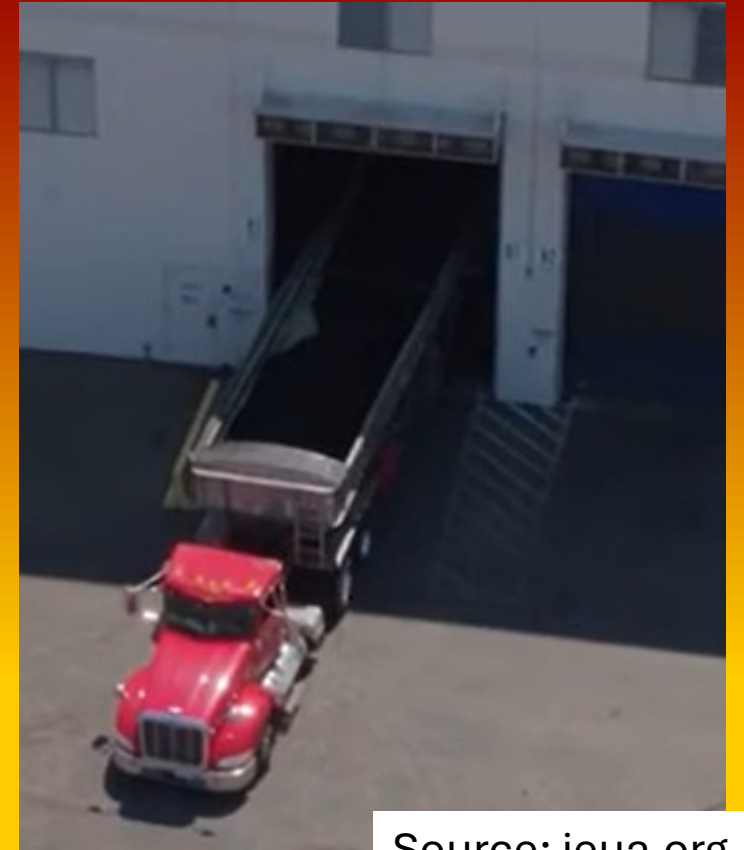


- Addresses co-composting operations, or composting of biosolids or piles with more than 20% manure
- Some requirements of co-composting located in subdivision (c) Definitions or subdivision (j) Exemptions
- One facility not required, by exemption, to install controls or use best management practices
- Annual reporting (called Annual Update) was required in a separate rule: Rule 1133

Note: Composting emission factors currently under review by the California Air Pollution Control Officers Association. Review not expected to be complete by September.

Summary of Changes for PAR 1133.2

- Subdivision **(d) Requirements** now includes:
 - Requirements for active phase, formerly in Definitions
 - 22 days or Solvita Compost Maturity Index 4.5
 - Requirements for curing phase, formerly in Definitions
 - 40 days, Solvita Compost Maturity Index 6.0, or direct respirometry
- New subdivision **(e) Existing Small-capacity Co-composting Operation Alternative**
 - Requires windrow composting best management practices, from Rule 1133.3
- New subdivision **(f) Publicly-owned Small-capacity Co-composting Operation Alternative**
 - Existing requirements moved from Exemptions to dedicated subdivision



Source: ieua.org

Windrow Composting Best Management Practices



Cover top of windrow with at least 6 inches of finished compost or compost overs within 24 hours of pile formation



Prior to turning windrow, ensure pile is sufficiently wet by squeeze ball test within 6 hours of turning pile

Additional Elements of PAR 1133.2



- Subdivision **(g) Test Methods and Protocol** updated with clear procedures for source test protocols, testing, and reports
- Subdivision **(h) Recordkeeping** harmonized with other recordkeeping requirements in rule series
- Annual reporting, formerly located in Rule 1133, now in subdivision **(i) Reporting**

PAR 1133.2 – Subdivision (j) Exemptions

- Exemption lowered from 1,000 tons* to 100 tons of throughput per year
 - Formerly-exempt facility could emit more than 8 lbs ammonia per day, using default emission factors
- Exemption for existing small-capacity co-composting operations deleted
 - Now required to use best management practices in subdivision (e)
- Requirements for publicly-owned small-capacity co-composting operations moved to dedicated subdivision (f)



** Feedback received regarding exemption to allow development of facility-specific baseline emission factors*

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Next Steps

Background on Rule 1133.3



- Addresses composting operations not subject to Rule 1133.2 (co-composting)
 - Rule 1133.3 applies to “greenwaste composting”
 - Rule 1133.3 also includes composting of less than 20% manure and foodwaste composting
- As with other rules in series, annual reporting requirements located in Rule 1133
- No *de minimus* exemption threshold present in existing rule language
- Also did not exempt composting at schools, performed for education, or agricultural operations, exempt in other rules in series

Summary of Changes for PAR 1133.3

- Subdivision **(d) Requirements** now includes:
 - Similar to PAR 1133.2, requirements for active phase and curing phase of composting, formerly located in Definitions
- Subdivision **(e) Test Methods** and Protocol updated with more clear procedures
- Subdivision **(f) Recordkeeping** updated with clearer rule language
- Annual reporting, formerly located in Rule 1133, now in subdivision **(g) Reporting**



PAR 1133.3 – Subdivision (h) Exemptions



- Added educational exemption for school composting
- Added agricultural operation exemption
- Added exemption set at 100 tons of throughput per calendar year
 - Consistent with exemption thresholds in PARs 1133, 1133.1, and 1133.2
 - Facility performing 100 tons of composting, expected to emit less than 0.2 lbs of ammonia and about 1 lbs of VOC per day using default emission factors

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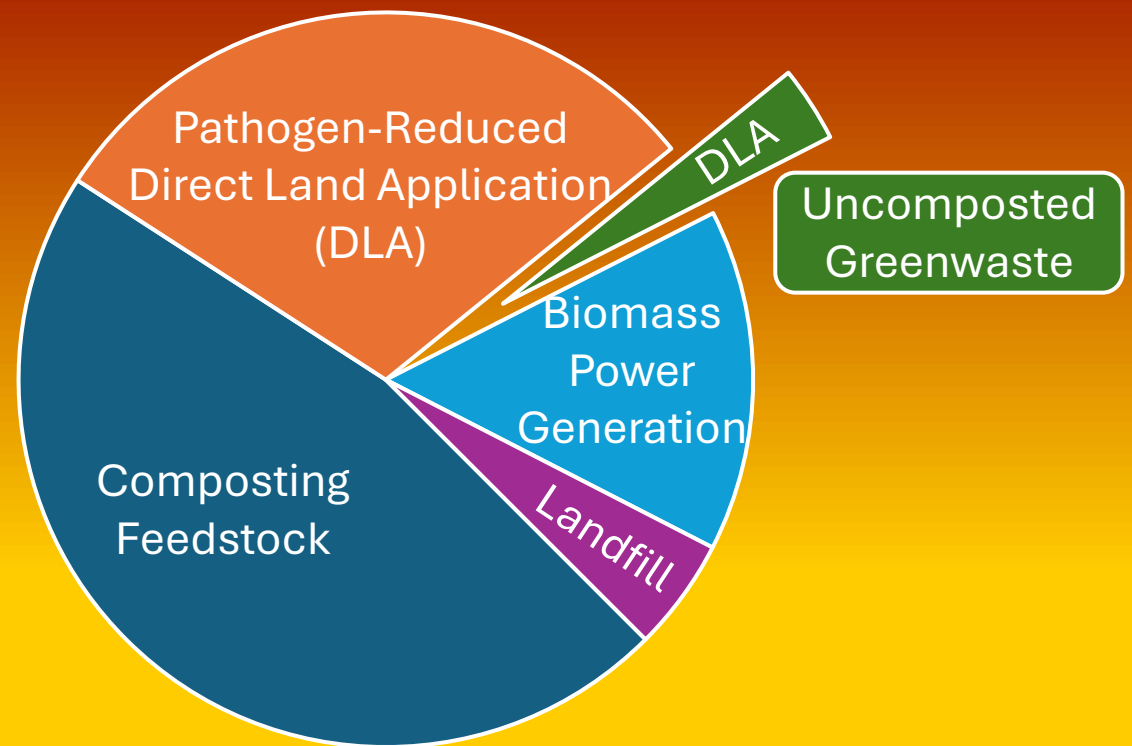
Impact Assessments

Next Steps

Direct Land Application Assessment

- Estimated **2,460,000 tons** of greenwaste produced within South Coast AQMD annually
- 3.3%, or **82,080 tons**, is uncomposted and used for direct land application (DLA)

Distribution of Greenwaste in South Coast AQMD



Direct Land Application Emission Factors

VOC Emission Factor (lbs/ton)	Ammonia Emission Factor (lbs/ton)
17.58	1.54

- Currently no published VOC and ammonia emission factors for direct land application (DLA)
- Staff developed DLA emission factors based on average of 4 source tests of organic material stockpile, normalized over 90 days
 - 90 days was longest time period studied in any of the 4 source tests

DLA Emission Reduction Measures

- Using DLA baseline emission factors, staff calculated emission reductions for each mitigation measure
- Option 1 reduces VOC by **90%** and ammonia by **80%**, based on 2015 CalRecycle study
- Option 2 reduces VOC by **40%** and ammonia by **20%**, based on 2011 South Coast AQMD Staff Report

Mitigation Measure	Controlled VOC Emission Reductions (lbs/ton)	Controlled Ammonia Emission Reductions (lbs/ton)
Option 1: Till, inject, or plow 6" deep	15.82	1.23
Option 2: Cover with 6" of finished compost or overs	7.03	0.31

DLA Emission Reductions and Cost Estimates

Mitigation Measure	VOC Emission Reductions (tons/year)	Ammonia Emission Reductions (tons/year)
Option 1: Till, inject, or plow 6" deep	324.7	25.3
Option 2: Cover with 6" of finished compost or compost overs	144.3	6.3
Total	469.0	31.6

- Staff assumed 50% Option 1 and 50% Option 2
- Annualized cost industry-wide calculated at **\$134,400**
 - Costs for compliance with PAR 1133 are associated with recordkeeping
- For the estimated 86 supplying facilities, average annual cost calculated at \$1,600 per facility

Cost-Effectiveness: DLA Restrictions



	VOC	Ammonia
Annualized Cost	\$134,400	
Emission Reductions (tons/year)	469.0	31.6
Cost-Effectiveness (per ton)	\$300	\$4,300
Cost-Effectiveness Threshold (per ton)	\$41,400*	Not yet established by Governing Board

** Adjusted for inflation to 2024 U.S. dollars*

Co-composting BARCT Assessment

- As noted earlier in presentation, one facility previously not required, by exemption, to install controls or use best management practices to reduce emissions



Project	Category	Requirement
PAR 1133.2	Design capacity under 35,000 tons per year and in operation since 2003	Windrow Composting Best Management Practices, consistent with Rule 1133.3
Rule 1133.2	Design capacity under 35,000 tons per year and in operation since 2003	Exempt from any mitigation measures
Rule 4565	Throughput between 20,000 and 100,000 tons per year	Combination of 4 mitigation measures

BMPs Emission Reductions and Cost Estimates



- BMPs expected to reduce emissions by **0.71 lb VOC** and **0.59 lb ammonia** per ton throughput
 - Baseline co-composting emission factors detailed in 2003 Staff Report
 - Emission reductions associated with BMPs listed in 2011 Staff Report
- Cost of BMPs determined to be **\$1.73** per ton throughput
 - From 2011 Staff Report, adjusted for inflation from 2010 dollars to 2024 dollars

Cost-Effectiveness: BMPs

<i>1 facility detected (design capacity 35,000 tons/year)</i>	VOC	Ammonia
Annualized Cost	\$60,700	
Emission Reductions (tons/year)	12.4	10.3
Cost-Effectiveness (per ton)	\$4,900	\$5,900
Cost-Effectiveness Threshold (per ton)	\$41,400*	Not yet established by Governing Board



* Adjusted for inflation to 2024 U.S. dollars

Enclosure of Co-composting Operations

- Instead of BMPs, staff had also considered enclosure vented to controls for co-composting operations with a design capacity of 35,000 tons per year
- Staff determined that annualized cost, when considering capital and recurring costs, to be **\$1,776,000 per year**
- Emission reductions expected to be 80% for both VOC and ammonia from baseline emission factors

	VOC	Ammonia
Baseline Co-composting Emission Factors (lbs/ton)	1.78	2.93
Expected control efficiency	80%	80%
Controlled Co-composting Emission Factors (lbs/ton)	0.36	0.59
Emission Reductions (lbs/ton)	1.42	2.34

Cost-Effectiveness: Enclosure

<i>Identified one facility with design capacity 35,000 tons/year</i>	VOC	Ammonia
Annualized Cost	\$1,776,000	
Emission Reductions (tons/year)	24.9	41.0
Cost-Effectiveness (per ton)	\$71,500	\$43,400
Incremental Cost-Effectiveness (per ton)	\$138,000	\$56,000
Cost-Effectiveness Threshold (per ton)	\$41,400*	Not yet established by Governing Board



- **Conclusion:** enclosure of co-composting operations with design capacity of 35,000 tons per year is not cost-effective with respect to VOC

* Adjusted for inflation to 2024 U.S. dollars

Overall Proposal Cost-Effectiveness

- Combined, PAR 1133 Series would reduce:
 - VOC emissions by **1.32 tons/day**
 - Ammonia emissions by **0.11 tons/day**

	VOC	Ammonia
Annualized Cost	\$195,100	
Emission Reductions (tons/year)	481.4	41.9
Cost-Effectiveness (per ton)	\$400	\$4,700
Cost-Effectiveness Threshold (per ton)	\$41,400*	Not yet established by Governing Board

** Adjusted for inflation to 2024 U.S. dollars*

Socioeconomic Impact Assessment

- Socioeconomic analysis for PAR 1133 Series will consider:
 - Types of affected industries, including small businesses
 - Potential actions to be taken to comply with proposed requirements
 - Range of probable costs, including costs to industry or business
- Preliminary analysis indicates estimated annual costs will be less than \$1 million
- Socioeconomic Impact Assessment will be made available in the Draft Staff Report at least 30 days prior to the Public Hearing on September 5, 2025 (subject to change)

California Environmental Quality Act (CEQA)

- Staff is reviewing PAR 1133 Series to determine if the project will result in any potential adverse environmental impacts
- Appropriate CEQA documentation will be prepared based on the analysis



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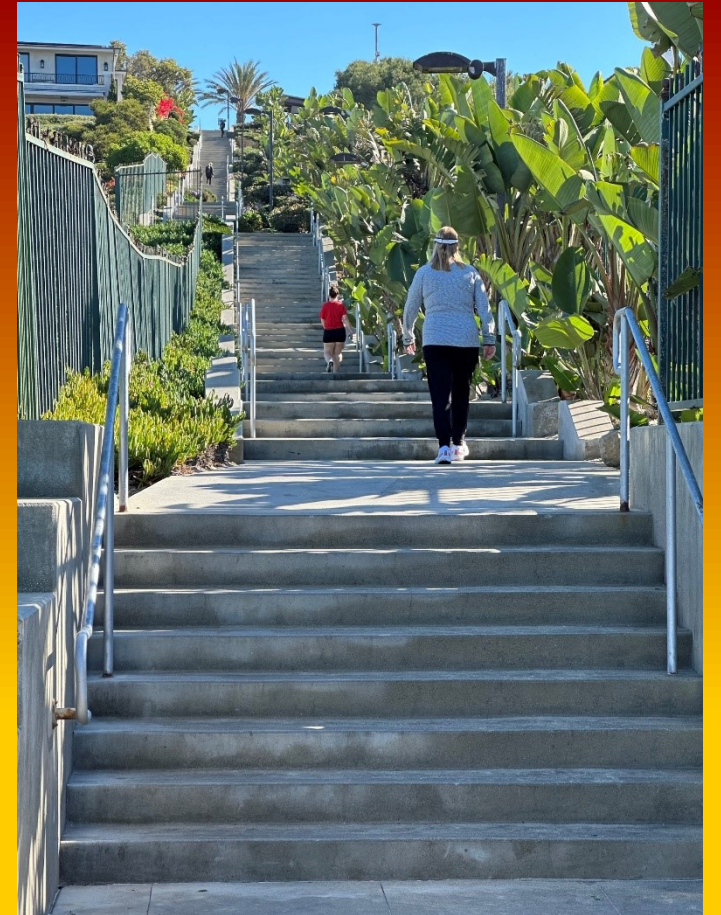
PAR 1133.3 – Emission Reductions from Composting Operations

Impact Assessments

Next Steps

Next Steps

Milestone	Projected Date
Written Comments Due	July 23, 2025
Set Hearing	August 1, 2025
Public Hearing	September 5, 2025



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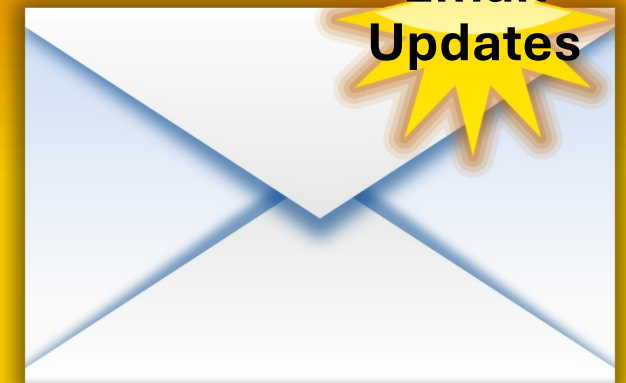
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