

RULE 4565 BIOSOLIDS, ANIMAL MANURE, AND POULTRY LITTER OPERATIONS  
(Adopted March 15, 2007)

1.0 Purpose

The purpose of this rule is to limit emissions of volatile organic compounds (VOC) from operations involving the management of biosolids, animal manure, or poultry litter.

2.0 Applicability

The provisions of this rule apply to all facilities whose throughput consists entirely or in part of biosolids, animal manure, or poultry litter and the operator who landfills, land applies, composts, or co-composts these materials.

3.0 Definitions

3.1 Active Composting: the phase of the composting process that begins when organic materials are mixed together for composting and lasts until one of the following conditions is met:

3.1.1 The organic material emits no more than seven (7) mg carbon dioxide per gram of organic material (CO<sub>2</sub>-C) per day, as measured using the test method in Section 6.2.1.1; or

3.1.2 The material has a Solvita Maturity Index of 5 or greater as measured using the test method in Section 6.2.1.2; or

3.1.3 The material has been composted for a period of at least 22 consecutive calendar days.

3.2 Aerated Static Pile: a system designed, constructed, maintained, and operated for decomposing organic material in which the material is placed on top of perforated plates or pipes that are connected to blowers that either push or pull air through the piles.

3.3 Alternative Mitigation Measure: a mitigation measure, proposed by the operator, that is determined by the APCO and EPA to achieve VOC reductions that are equal to or greater than the VOC reductions that would be achieved by other mitigation measures listed in this rule, that operators could choose as a means of complying with rule requirements.

3.4 Animal Manure: non-human animal excretions and waste, including, but not limited to, dried solids and urine from cows, cattle, or swine.

- 3.5 APCO: as defined in Rule 1020 (Definitions).
- 3.6 ARB: California Air Resources Board.
- 3.7 Background: a reading on a hydrocarbon analyzer that is measured at a distance no greater than two (2) meters upwind from any component to be inspected and which is not influenced by any specific emission point.
- 3.8 BARCT: Best Available Retrofit Control Technology is 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.
- 3.9 Biosolids: organic material resulting from the treatment of sewage sludge or wastewater. Biosolids that have completed both the active phase and the curing phase of composting are considered finished compost for purposes of this rule.
- 3.10 Class One Mitigation Measure: a VOC mitigation measure or combination of measures for composting facilities subject to the rule that, at the time of rule adoption, are considered BARCT for VOC for all composting facilities.
- 3.11 Class Two Mitigation Measure: a VOC mitigation measure or combination of measures for the composting facilities subject to the rule with throughputs of at least 100,000 wet tons per year that, in combination with Class One mitigation measures, are considered BARCT for VOC for these facilities at the time of rule adoption.
- 3.12 Co-composting: composting where biosolids and/or animal manure and/or poultry litter are mixed with other materials, including amendments, to produce compost. Co-composting includes both the active and curing phases of the composting process.
- 3.13 Compostable Material: any organic material that is capable of undergoing active composting.
- 3.14 Composting: the controlled biological decomposition of organic material, such as sewage sludge, animal manures, or crop residues, under aerobic (with air) or anaerobic (without air) conditions to form a humus-like material.
- 3.15 Composting Facility: any facility where composting or co-composting occurs. Unless exempt under Section 4.0 of this rule, only those composting/co-composting facilities that use biosolids, animal manure, or poultry litter as part of the composting or co-composting operation are subject to this rule.

- 3.16 Contiguous or Adjacent Property: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).
- 3.17 Curing Composting: the phase of the composting process that begins immediately after the end of the active phase of composting and lasts until one of the following conditions is met:
  - 3.17.1 The organic material emits no more than four (4) mg CO<sub>2</sub>-C per gram of organic material per day, as measured using the test method in Section 6.2.1.1; or
  - 3.17.2 The compost has a Solvita Maturity Index of 7 or greater, as measured using the test method in Section 6.2.1.2; or
  - 3.17.3 The material has been composted at least 40 consecutive calendar days after the active composting period.
- 3.18 Day: a continuous twenty-four hour period, beginning at 12:00 A.M.
- 3.19 EPA: United States Environmental Protection Agency.
- 3.20 Facility: a portion of real property that is on one or more contiguous or adjacent properties all of which are under common ownership or control.
- 3.21 Finished Compost: a humus-like material that meets at least one of the following conditions:
  - 3.21.1 Emits no more than four (4) mg CO<sub>2</sub>-C per gram of organic material per day, as measured using the test method in Section 6.2.1.1;
  - 3.21.2 Has a Solvita Maturity Index of 7 or greater, as measured using the test method in Section 6.2.1.2;
  - 3.21.3 Has completed both the active and curing phases of composting.
- 3.22 Hydrocarbon Vapor Analyzer: a hand-held portable hydrocarbon analyzer that meets the criteria specified in Section 6.2.4.2 or Section 6.2.5.5.
- 3.23 In-vessel Composting System: a system where all compostable material is inside a negatively-pressurized or positively-pressurized enclosure that is not open to the atmosphere and that is composed of hard-piping, ductwork connections, and, if necessary, flow inducing devices that transport gas or vapor from a piece or pieces of equipment.

- 3.24 Land Application: the final disposal of biosolids, animal manure, or poultry litter by spreading or piling of the material in an open area in a manner that does not meet the definition of landfilling.
- 3.25 Landfill (Landfilling): a method for final disposal of biosolids, animal manure, or poultry litter on land where the material is spread and compacted and a daily cover is applied.
- 3.26 Land Incorporate: use of a method, such as tilling, injecting, or plowing that covers and mixes material with soil.
- 3.27 Mitigation Measure: an activity, work practice, or technology that reduces VOC air pollutants emitted by or associated with the management of biosolids, animal manure, or poultry litter.
- 3.28 Operator: any person who owns, leases, supervises, or operates a facility that processes biosolids, animal manure, or poultry litter, or equipment on such a facility.
- 3.29 Pathogen Reduction: any process conducted entirely or in part to reduce the number of disease-causing organisms present in biosolids, animal manure, or poultry litter in accordance with Title 14 Chapter 3.1 Division 7 Section 17868.3 of the California Code of Regulations (CCR).
- 3.30 Pile: material that is heaped together.
- 3.31 Poultry Litter: poultry excretions and waste, including, but not limited to, dried solids and urine from chickens, turkeys, geese, or ducks.
- 3.32 Solvita Maturity Index: an index that defines the stage where compost exhibits resistance to further decomposition, as tested by the Solvita Maturity Test<sup>®</sup>.
- 3.33 Throughput: the weight of material to be processed, as it is received or generated at the facility subject to this rule, prior to any dewatering or treatment at the receiving facility. Throughput includes the weight of moisture present in the received materials.
- 3.34 Tipping Fees: money or other financial benefits received by a facility, owner, or operator in exchange for the facility, owner, or operator accepting green waste, biosolids, animal manure, or poultry litter.
- 3.35 TMECC: Test Methods for the Examination of Composting and Compost by the US Composting Council Research and Education Foundation.

- 3.36 VOC Control Device: any APCO, ARB, and EPA approved machine or technology used to reduce VOC emissions from a VOC emission source including, but not limited to, a biofilter, a carbon scrubber, or an incineration device.
- 3.37 Volatile Organic Compounds (VOC): as defined in Rule 1020 (Definitions).
- 3.38 Year: a continuous, 12-month period beginning on January 1 and ending on December 31.

#### 4.0 Exemptions

Except for the applicable recordkeeping requirements of Section 6.1.1, the provisions of this rule shall not apply to the following facilities:

- 4.1 Facilities subject to Rule 4570 (Confined Animal Facilities) or facilities that are specifically exempt under Section 4.0 of Rule 4570.
- 4.2 Composting/co-composting facilities whose throughput includes a total of less than 100 wet tons per year of biosolids, animal manure, and poultry litter. For purposes of this exemption only, only biosolids, animal manure and poultry litter are counted in the throughput determination.
- 4.3 Operators who land apply any combination of biosolids, animal manure, or poultry litter and that meet all of the following criteria:
  - 4.3.1 Receive, in total, less than 10,000 wet tons per year of any combination of biosolids, animal manure, or poultry litter; and
  - 4.3.2 Are not intentionally conducting pathogen reduction on any biosolids, animal manure, or poultry litter at the facility; and
  - 4.3.3 Are not subject to the regulations of the California Integrated Waste Management Board pertaining to solid waste transfer/processing or disposal; and
  - 4.3.4 Do not receive or collect tipping fees.
- 4.4 Facilities that place all material containing un-composted biosolids, animal manure, or poultry litter in airtight bags or packages for sale or sell material containing biosolids, animal manure, or poultry litter as a soil amendment or fertilizer. Within 15 days of receipt, the biosolids, animal manure, or poultry litter must be placed in airtight bags or removed from the facility.

## 5.0 Requirements

### 5.1 Landfill Requirements

5.1.1 Within 24 hours of receipt at the facility, an operator that landfills biosolids, animal manure, or poultry litter shall cover the material with one of the following covers:

5.1.1.1 Six inches of finished compost, or

5.1.1.2 Six inches of soil, or

5.1.1.3 A waterproof covering, or

5.1.1.4 With the exception of biosolids or biosolids-derived material, an alternative material of alternative thickness as approved in California Code of Regulations, Title 27, Section 20690. Biosolids that have been through both the active and curing phases of the composting process are not considered biosolids or biosolids-derived material for the purposes of this requirement.

5.1.1.5 Operator shall not use biosolids or biosolids-derived material as alternative daily cover unless the operator has received an Authority to Construct authorizing such cover. At least 12 months prior to the intended use of such material as an alternative daily cover, an operator shall apply for a new or modified Permit to Operate and shall comply with all applicable Rule 2201 requirements including Best Available Control Technology (BACT), emission offsets, and public notification. In establishing BACT, the District must consider the use of alternate covers and all other available control technologies.

5.1.2 In lieu of covering the biosolids, animal manure, or poultry litter as in Section 5.1.1, an operator may implement an alternative mitigation measure that demonstrates at least a 10% reduction in VOC emissions.

### 5.2 Land Application Requirements

An operator that land-applies material containing biosolids, animal manure, or poultry litter shall implement at least one of the mitigation measures in Table 1.

<b>Table 1 - Land Application Mitigation Measures</b>	
1.	Directly inject the biosolids, animal manure, or poultry litter at least three inches (3”) below the soil surface within three (3) hours of receipt at the facility.
2.	Land incorporate the biosolids, animal manure, or poultry litter within three (3) hours of receipt at the facility. Materials received after 6 pm must be land incorporated by noon of the following calendar day.
3.	Cover the biosolids, animal manure, or poultry litter within three (3) hours of receipt at the facility. The cover shall be one of the following: a waterproof cover; at least six (6) inches of finished compost; or at least six (6) inches of soil. When conditions are appropriate to allow direct injection or land incorporation of the covered material, the material shall be directly injected or land incorporated within three (3) hours of uncovering the material.
4.	Implement an alternative mitigation measure(s) not listed that demonstrates at least a 10% reduction in VOC emissions.

### 5.3 Composting/Co-composting Facility Requirements

5.3.1 Operators of composting/co-composting facilities with throughputs less than 20,000 wet tons per year shall meet either 5.3.1.1 or 5.3.1.2.

5.3.1.1 Implement at least three (3) of the Class One mitigation measures listed in Table 2.

5.3.1.2 Implement at least two (2) Class One mitigation measures in addition to one (1) Class Two mitigation measure for active composting.

5.3.2 Operators of composting/co-composting facilities with throughputs at least 20,000 wet tons per year but less than 100,000 wet tons per year shall meet either 5.3.2.1 or 5.3.2.2.

5.3.2.1 Implement at least four (4) of Class One mitigation measures listed in Table 2.

5.3.2.2 Implement at least three (3) Class One mitigation measures in addition to one (1) Class Two mitigation measure on active composting processes.

5.3.3 Operators of composting/co-composting facilities with throughputs at least 100,000 wet tons per year shall meet either 5.3.3.1 or 5.3.3.2.

5.3.3.1 Implement at least four (4) Class One mitigation measures in addition to one (1) Class Two mitigation measure for active composting.

5.3.3.2 Implement at least two (2) Class One mitigation measures, in addition to one (1) Class Two mitigation measure for active composting and one (1) Class Two mitigation measure for curing composting.

<b>Table 2 – Composting/Co-composting Facility Mitigation Measures</b>	
<i>Class One Mitigation Measures</i>	
1.	Scrape or sweep, at least once a day, all areas where compostable material is mixed, screened, or stored such that no compostable material greater than one inch (1”) in height is visible in the areas scraped or swept immediately after scraping or sweeping, except for compostable material in process piles or storage piles.
2.	Maintain a minimum oxygen concentration of at least five percent (5%), by volume, in the free air space of every active and curing compost pile.
3.	Maintain the moisture content of every active and curing compost pile between 40% and 70%, by weight.
4.	Manage every active pile such that the initial carbon to nitrogen ratio of every pile is at least twenty (20) to one (1).
5.	Cover all active compost piles within 3 hours of each turning with one of the following: a waterproof covering; at least six (6) inches of finished compost; or at least six (6) inches of soil.
6.	Cover all curing compost piles within 3 hours of each turning with one of the following: a waterproof covering; at least six (6) inches of finished compost; or at least six (6) inches of soil.
7.	Implement an alternative Class One mitigation measure(s) not listed above that demonstrates at least a 10% reduction, by weight, in VOC emissions.
<i>Class Two Mitigation Measures</i>	
8.	Conduct all active composting in aerated static pile(s) vented to a VOC emission control device with a VOC control efficiency of at least 80% by weight.
9.	Conduct all active composting in an in-vessel composting system vented to a VOC emission control device with a VOC control efficiency of at least 80% by weight.
10.	Conduct all curing composting in aerated static pile(s) vented to a VOC emission control device with a VOC control efficiency of at least 80% by weight.
11.	Conduct all curing composting in an in-vessel composting system vented to a VOC emission control device with a VOC control efficiency of at least 80% by weight.
12.	Implement an alternative Class Two mitigation measure(s) not listed above that demonstrates at least 80% reduction, by weight, in VOC emissions.

5.3.4 Operators selecting oxygen concentration or moisture content as a mitigation measure shall test each active compost pile and each curing compost pile at least once each week using the applicable test methods in



Section 6.2.2, unless the APCO and EPA determine, based on the weekly test results, that a different testing frequency is warranted to ensure compliance.

5.3.5 For operators selecting initial carbon to nitrogen ratio as a mitigation measure shall test the material when it is prepared for active composting using the applicable test method in Section 6.2.2. Testing shall be done each day that materials are mixed. Samples shall be representative of the initial composition of the active compost pile.

5.3.6 If a tested parameter is found to be outside the applicable limits specified in Table 2, the operator shall take remedial action within 24 hours of discovery to bring pile characteristics within the specified limits.

#### 5.4 VOCs from Aerated Static Piles and In-Vessel Systems

5.4.1 In addition to the requirements of Section 5.3, an aerated static pile shall have no measurable increase ( $< 0.45$  ppmv increase) over background levels of hydrocarbons within three feet of any surface of the aerated static pile.

5.4.2 In addition to the requirements of Section 5.3, an in-vessel composting operation shall have no measurable increase ( $< 0.45$  ppmv increase) over background levels of hydrocarbons outside the in-vessel enclosure, including any opening that occurs briefly for access or maintenance.

5.4.3 An operator shall test for VOCs once each calendar quarter.

5.4.3.1 The location and number of test points for aerated static pile composting system shall be determined using TMECC 02.01-B (Selection of Sampling Locations for Windrows and Piles).

5.4.3.2 The openings of an in-vessel composting system shall be tested according to the test method specified in Section 6.2.3.2.

5.4.3.3 The hydrocarbon analyzer shall meet the requirements specified in Section 6.2.4.2.

5.4.4 In lieu of complying with the applicable requirements of Sections 5.4.1 or 5.4.2, an operator may monitor one or more alternative parameters. The operator must demonstrate, to the satisfaction of the APCO and EPA, that the alternative parameter(s) correlates to the composting system capturing as much of the VOC emissions as technologically practical.

5.4.5 In lieu of complying with the requirements of Section 5.4.3, an operator may use a different analyzer or test on a different schedule if the operator demonstrates, to the satisfaction of the APCO and EPA, that the alternate analyzer or alternate schedule is as indicative of system performance as the requirements Section 5.4.3.

## 5.5 Biofilter Requirements:

5.5.1 In addition to complying with the applicable requirements of Section 5.3, an operator using a biofilter as a VOC emission control device shall maintain all biofilters at their facility in such a manner that each biofilter complies with the following conditions at all times when it is in operation:

5.5.1.1 The biofilter media temperature is between 70 degrees Fahrenheit and 110 degrees Fahrenheit,

5.5.1.2 The moisture content of the biofilter media is between 40.0% and 70.0% by weight.

5.5.1.3 The pH of the biofilter media is between 6.5 and 8.0.

5.5.1.4 Visual inspection - The biofilter media is free of observable rodent burrows, cracks, and channeling. Weed coverage shall be less than 10% of the exposed surface of the biofilter.

## 5.5.2 Biofilter Monitoring Schedule

5.5.2.1 The biofilter media shall be tested for the following properties at least once per calendar month in five separate, evenly spaced locations throughout the biofilter: temperature, moisture, and pH.

5.5.2.2 Visual inspection of biofilter media shall be performed at least once each week.

5.5.3 In lieu of complying with the requirements of Section 5.5.1, an operator may be held to a different range of values or monitor alternative parameter(s) if the operator demonstrates, to the satisfaction of the APCO and EPA, that the range of values or alternate parameter(s) is as indicative of system performance as the applicable requirements Section 5.5.1. The alternate range of the parameters listed in 5.5.1 or alternate monitoring parameter can be demonstrated by a source test.

5.5.4 In lieu of complying with the requirements of Section 5.5.2, an operator may monitor on a different schedule if the operator demonstrates, to the satisfaction of the APCO and EPA, that alternate schedule is as indicative of system performance as the schedule in Section 5.5.2.

5.5.5 An operator using approved alternative parameter(s) from Section 5.5.3 shall also demonstrate the monitoring frequency for the alternative parameter(s) as indicated in Section 5.5.4 is adequate to ensure rule compliance.

#### 5.6 Non-Biofilter VOC Emission Control Device Requirements

5.6.1 In addition to the applicable requirements of Sections 5.3 and 5.4, an operator using a VOC emission control device that is not a biofilter shall monitor key system operating parameters that demonstrate continuous operation and compliance of the VOC emission control device during composting operations. Examples of key system operating parameters include, but are not limited to, temperatures, pressures, and flow rates.

5.6.2 In addition to the applicable requirements of Sections 5.3 and 5.4, operators using a VOC emission control device that is not a biofilter shall operate and maintain the VOC emission control device in accordance with the manufacturer's recommendations and any additional operating and maintenance standards determined necessary by the APCO, ARB, and EPA to ensure proper operation of the VOC control device.

#### 5.7 Source Testing Requirements for VOC Emission Control Device

5.7.1 The VOC emission control device (biofilter or non-biofilter) shall be tested for VOC control efficiency within ninety days of installation and every two years thereafter. VOC emission control devices with an active Permit-to-Operate on March 15, 2007 shall be tested for VOC control efficiency on or before September 30, 2007, and every two years thereafter.

5.7.2 The source test must be conducted under representative operating conditions with respect to seasonal conditions, compost composition, process throughput, processing of materials, and pile geometries.

5.7.3 An operator of a biofilter may request a longer time between installation and source test if the operator shows, to the satisfaction of the APCO and EPA, that a longer time is necessary. In no case shall the time between installation and the source test be greater than six (6) months.

## 6.0 Administrative Requirements

### 6.1 Recordkeeping

#### 6.1.1 Exempt Operations Records

6.1.1.1 Operators claiming exemption under Section 4.0 shall maintain records to demonstrate that the operation meets all of the conditions of the claimed exemption.

6.1.1.2 Except for throughput records, records documenting claim of exemption shall be retained until two years after loss of exemption.

6.1.1.3 Throughput records demonstrating claim of exemption shall be retained according to Section 6.1.8.

#### 6.1.2 Landfill Records

An operator subject to this rule that landfills biosolids, animal manure, or poultry litter shall maintain an operations log. In the operations log, the operator shall record the following information on a daily basis:

6.1.2.1 The time at which the biosolids, animal manure, or poultry litter arrives on site; and

6.1.2.2 The quantity of biosolids, animal manure, or poultry litter received; and

6.1.2.3 The time at which the received material is completely covered as described in the mitigation measures or the time at which the alternate mitigation measure is in place.

#### 6.1.3 Land Application Records

An operator subject to this rule that land applies any combination of biosolids, animal manure, or poultry litter shall maintain an operations log. In the operations log, the operator shall record the following information on a daily basis:

6.1.3.1 The time at which the biosolids, animal manure, or poultry litter arrives on site; and

6.1.3.2 The quantity of biosolids, animal manure, or poultry litter received; and

6.1.3.3 Other information necessary to determine compliance with the selected mitigation measures.

#### 6.1.4 Composting Facility Records

An operator of a composting facility subject to this rule shall keep the following records:

##### 6.1.4.1 Throughput Records

On a daily basis, an operator shall record the quantity of materials received that would be used in the compost/co-compost operation. These materials include, but are not limited to, material that may be recovered from the composting process for reuse in another batch of compostable material; biosolids; animal manure; poultry litter; and green waste.

##### 6.1.4.2 Class One Mitigation Measure Records

An operator shall keep records that demonstrate that the facility meets the Class One mitigation measures selected for the facility each day that a mitigation measure is performed. For operators using an approved alternative Class One mitigation measure, the operator shall keep records for the alternative mitigation measure each day the alternative mitigation measure is performed.

##### 6.1.4.3 Class Two Mitigation Measure Records

An operator shall keep records according to 6.1.5 through 6.1.7, as applicable, for the composting operations subject to Class Two mitigation measures.

#### 6.1.5 VOC Inspection Records

The operator shall maintain an inspection logbook. The following information shall be contained in the logbook:

6.1.5.1 The date of the VOC inspection.

6.1.5.2 The reading of the portable hydrocarbon analyzer in ppmv for each inspection location.

6.1.5.3 If an alternate parameter is monitored, list the parameter monitored and record the level of the alternate parameter for each inspection location.

#### 6.1.6 Biofilter Records

In addition to the records required in Section 6.1.4, an operator using a biofilter as a VOC emission control device shall keep records with the following information:

6.1.6.1 Date of biofilter monitoring.

6.1.6.2 The parameter monitored and the test results for the parameter monitored.

6.1.6.3 If an alternate parameter is monitored, list the parameter monitored and record the level of the alternate parameter for each location.

#### 6.1.7 Non-Biofilter VOC Emission Control Device Records

6.1.7.1 An operator using a VOC emission control system that is not a biofilter as a means of complying with this rule shall maintain daily records of key system operating parameters which will demonstrate continuous operation and compliance of the VOC emission control system during composting operations. Examples of key system operation parameters include, but are not limited to, temperature, pressure, and flow rates.

6.1.7.2 An operator using a VOC emission control device that is not a biofilter shall keep records describing all maintenance work on the VOC emission control system.

#### 6.1.8 Records Retention

Unless otherwise specified in this section, the operator shall retain the applicable records specified in this section on-site for a period of five years, make the records available on-site during normal business hours to the APCO, ARB, or EPA, and submit the records to the APCO, ARB, or EPA upon request.

## 6.2 Test Methods

### 6.2.1 Compost Maturity/Stability

Any of the following test methods:

6.2.1.1 TMECC Method 05-08-B (Carbon Dioxide Evolution Rate); or

6.2.1.2 TMECC Method 05-08-E (Solvita Maturity Test®).

### 6.2.2 Composting Facility Class One Mitigation Measure Test Methods

6.2.2.1 Oxygen Concentration – TMECC Method 05.08-C (In-Situ Oxygen Refresh Rate)

6.2.2.2 Moisture Content - TMECC Method 03.09 (Total Solids and Moisture at  $70 \pm 5$  degrees Centigrade)

6.2.2.3 Carbon to Nitrogen Ratio - TMECC Method 05.02-A (Carbon to Nitrogen Ratio)

### 6.2.3 Composting Facility Class Two Mitigation Measure Test Methods

#### 6.2.3.1 Biofilter Control Efficiency

The control efficiency of a biofilter shall be determined using SCAQMD Method 25.3 (Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources). The SCAQMD Method 25.3 apparatus should be connected to sample directly inside the flux chamber or duct as applicable. Compost emissions are considered as water-soluble sources where the 50 ppm applicability limit of Method 25.3 does not apply. Samples from more than one location may be combined (composited) per SCAQMD Rule 1133.2 Attachment A Section 8.

#### 6.2.3.2 VOC Emission Control Device (Non-Biofilter) Control Efficiency

The control efficiency of a VOC emission control system shall be determined using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device. EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

#### 6.2.4 VOC Test Method

6.2.4.1 Test Method – EPA Method 21 (VOC Leaks)

6.2.4.2 Hydrocarbon Analyzer – The portable hydrocarbon analyzer shall be:

6.2.4.2.1 A flame ionization detector.

6.2.4.2.2 Operated per manufacturer's instructions.

6.3.4.2.3 Calibrated with certified zero and 10 ppmv methane standards.

#### 6.2.5 Biofilter Test Methods

6.2.5.1 Temperature – EPA Method 170.1 (Temperature – Thermometric)

6.2.5.2 Moisture Content - TMECC Method 03.09 (Total Solids and Moisture at  $70 \pm 5$  degrees Centigrade)

6.2.5.3 Media pH - TMECC Method 04.11-A (1:5 Slurry pH)

6.2.5.4 VOC – EPA Method 21 (VOC Leaks)

6.2.5.5 Hydrocarbon Analyzer for VOCs – The portable hydrocarbon analyzer shall be:

6.2.5.5.1 A flame ionization detector.

6.2.5.5.2 Operated per manufacturer's instructions.

6.3.5.5.3 Calibrated with certified zero and 10 ppmv methane standards.

#### 6.2.6 Alternative Test Methods

An operator may use an alternative test method to those listed in Sections 6.2.1 through 6.2.5 for which written approval of the APCO and EPA has been obtained.



### 6.2.7 Multiple Test Methods

When more than one test method or set of test methods is specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule.

## 6.3 Alternative Mitigation Measures Compliance Plan

6.3.1 A compliance plan for alternative mitigation measures shall contain the following elements:

6.3.1.1 The name(s), address(es) and telephone number(s) of person(s) responsible for the preparation, submittal, and implementation of the compliance plan;

6.3.1.2 The name, address, and telephone number(s) of the facility for which the compliance plan is being prepared;

6.3.1.3 A description and process diagram of the operation;

6.3.1.4 A complete description of the control method(s) that will be used in place of a listed mitigation method;

6.3.1.5 All data, calculations methodology, calculations, records, manufacturer specifications, and all other information necessary to determine that proposed mitigation measure will achieve the required emission reductions;

6.3.1.6 Methodology and calculations establishing the daily and annual VOC emissions or projected VOC emissions. Unless the operator establishes an operation-specific baseline emission factor per Section 6.3.1.7, an emission factor of 1.78 pounds VOC emissions per wet ton of material shall be used;

6.3.1.7 If applicable, a source test protocol developed in accordance with the requirements of Section 6.2.2, to establish operation-specific baseline emission factors;

6.3.1.8 A source testing protocol developed in accordance with the requirements of Section 6.2.2 to demonstrate compliance with the emission reductions proposed;

6.3.1.9 An identification of all equipment needing permits to construct and operate.

- 6.3.2 In evaluating the compliance plan, the APCO and EPA may require tests and sampling, as necessary, to determine the adequacy of the compliance plan and the likelihood of compliance with the emission reduction requirements.
- 6.3.3 The APCO and EPA may approve operation-specific baseline emissions factors provided the baseline emissions factors are substantiated with source test data obtained in accordance with Section 6.2 of this rule and the material and mixtures of materials is representative of normal operations.
- 6.3.4 The APCO and EPA shall provide interim approval of the compliance plan provided the operator submits all of the information required under Section 6.3.1 and the APCO and EPA verifies that, by design, the compliance plan will reduce emissions similar to or greater than listed mitigation measures.
- 6.3.5 Following the interim approval of the compliance plan, the APCO and EPA shall approve the compliance plan provided the operator submits, no later than 180 days after the effective date of compliance, a certification of the compliance report that includes all source test data, and the APCO and EPA verifies that the emissions from the mitigation measure meets the emission reduction limits.
- 6.3.6 The APCO and EPA may impose conditions necessary to ensure that the operation complies with the compliance plan and all applicable District rules.
- 6.3.7 The APCO and EPA may require the operator to maintain records consistent with the compliance plan necessary to demonstrate compliance with the compliance plan.
- 6.3.8 Compliance with the provision of the approved proposal does not exempt an operator from complying with the requirements of the California Health and Safety Code or any other District rule.

## 7.0 Compliance Schedule

### 7.1 Landfill Operations

On and after March 15, 2008, all landfill operations shall be in full compliance with all applicable rule requirements.

## 7.2 Land Application Operations

- 7.2.1 On and after March 15, 2008, all land application operations with usage of biosolids, animal manure, or poultry litter totaling 100,000 wet tons per year or less shall be in full compliance with all applicable rule requirements.
- 7.2.2 On and after September 15, 2008, all land application operations with usage of biosolids, animal manure, or poultry litter totaling more than 100,000 wet tons per year shall be in full compliance with all applicable rule requirements.

## 7.3 Composting/Co-composting Operations

- 7.3.1 On and after September 15, 2008, operators of compost/co-compost facilities with throughputs less than 100,000 wet tons per year shall be in full compliance with all applicable rule requirements.
- 7.3.2 On and after March 15, 2010, operators of compost/co-compost facilities with throughput of at least 100,000 wet tons per year shall be in full compliance with all applicable rule requirements.

## 7.4 Operators of compost/co-composting facilities with throughput of at least 100,000 wet tons per year planning to convert composting/co-composting operations to energy generation operations shall comply with Sections 7.4.1 through 7.4.4. For purposes of this compliance schedule, energy generation operations are those operations that use biosolids, animal manure, or poultry litter as fuel for equipment to generate electricity.

- 7.4.1 On or before March 15, 2008, the operator shall file an Authority to Construct (ATC) application and an "Emission Control Plan" containing information to support the extended compliance schedule, including, but not limited to, the following:
- 7.4.1.1 All data, calculations methodology, calculations, records, manufacturer specifications, and all other information necessary to determine the percent of composting/co-composting operations converted to energy generation. The percent of composting operations converted shall be calculated using the following equation.

$$\% \text{ converted} = \frac{(W_{\text{energy}})}{(W_{\text{current}})} \times 100$$

Where

% converted = the estimated percent of current compost/co-compost operations that would be converted to energy generation operations (%)

$W_{\text{energy}}$  = the estimated throughput of biosolids, animal manure or poultry litter and other materials used in energy generation operations (wet tons/year)

$W_{\text{current}}$  = the highest recorded annual throughput based on the calendar years 2002 through 2006 (wet tons/year)

- 7.4.1.2 All data, calculations methodology, calculations, records, manufacturer specifications, and all other information necessary to determine that the proposed energy generation operation will achieve VOC emission reductions of at least 96% by weight compared to the uncontrolled emissions from composting/co-composting;
  - 7.4.1.3 Methodology and calculations establishing the daily and annual VOC emissions or projected VOC emissions;
  - 7.4.1.4 If applicable, a source test protocol developed in accordance with the requirements of Section 6.2.2, to establish operation-specific baseline emission factors.
  - 7.4.1.5 A source testing protocol developed in accordance with the requirements of Section 6.2.2 to demonstrate compliance with the emission reductions proposed.
  - 7.4.1.6 A demonstration, subject to approval by the APCO and EPA, that the energy generation project will reduce VOC emissions by at least 96% by weight compared to the uncontrolled emissions from composting/co-composting. The project shall demonstrate a net air quality benefit with respect to particulate matter and ozone formation, after accounting for any increases in oxides of nitrogen (NO<sub>x</sub>) emissions from the project.
- 7.4.2 If the percent converted to energy generation operations in Section 7.4.1.1 is less than 100%, the unconverted composting/co-composting operations shall be in compliance with all provisions of the rule by the compliance schedule in Section 7.3.1 or Section 7.3.2, as appropriate; and

- 7.4.3 On and after September 15, 2008, the operator shall implement four (4) Class One mitigation measures from Table 2 for all compost/co-compost operations that would be converted to energy generation operations. These mitigation measures shall remain in place until 7.4.4 is implemented or the compost/co-compost operations are converted to energy generation operations, whichever comes first; and
- 7.4.4 On and after September 15, 2012, the operator shall implement three Class One mitigation measures and operated in-vessel composting systems, for both the active and curing phases of composting of all composting/co-composting operations, at the facility, that were originally planned for conversion to energy generation operations but that have not been converted. The in-vessel systems shall be vented to a VOC control system with a control efficiency of at least 90% by weight and complies with Section 5.4 of this rule.
- 7.4.5 Compliance with the provision of the approved proposal does not exempt an operator from complying with the requirements of the California Health and Safety Code or any other District rule.

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