

1 **DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT**

2 **Solid and Hazardous Waste Commission/Hazardous Materials and**
3 **Waste Management Division**

4 **6 CCR 1007-2**

5 **PART 1 - REGULATIONS PERTAINING TO SOLID WASTE SITES AND FACILITIES**

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7
8 **Deletion and Replacement of Existing Section 14 Composting Regulations with**
9 **New Section 14 Composting Regulations; and the Associated Additions and**
10 **Revision to Section 1.2 Definitions**

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13 **1) Section 1.2 is being amended by adding the following definitions in**
14 **alphabetical order to read as follows:**

15
16 **1.2 Definitions**

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19
20 **“Animal Waste”** means compostable materials generated by the customary and generally accepted
21 activities, practices, and procedures that farmers and ranchers engage in during the production of poultry
22 and livestock including manures and animal mortalities. Animal Waste also includes non-agricultural and
23 non-human animal excreta. Animal waste does not include food processing residuals such as paunch.

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27 **“Backyard Composting”** means composting on a residential property utilizing Type 1 and 2 feedstocks
28 but with no more than 100 cubic yards in process at one time.

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32 **“Commercial Composting Facility”** means any solid waste composting facility that accepts a fee for
33 solid waste composting, or any solid waste composting facility that composts solid waste to create a
34 compost or soil amendment and distributes the finished compost or soil amendment offsite for a fee.

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38 **“Compostable Products”** means containers, films or foodservice ware such as bowls, plates, cups,
39 cutlery, composed of materials such as vegetable matter, paper, cardboard, and plastics that meet ASTM
40 D6400, D6868. These products are labeled in accordance with the USCC Labeling Guidelines.

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43
44 **“Food Processing Residuals”** means compostable materials generated as a by-product of the industrial
45 food processing sector that are non-toxic, non-hazardous, and contain no sanitary wastewater. The term
46 does not include fats, oil, grease and Dissolved Air Flotation (DAF) skimmings.

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50 **“Food Processing Vegetative Waste”** means material generated in trimming, reject sorting, cleaning,
51 pressing, cooking, and filtering operations from the processing of fruits and vegetables and the like in
52 food processing and packaging operations or similar industries that process food products. Food
53 processing vegetative wastes include, but are not limited to, tomato skins and seeds, pepper cores,
54 potato peels, cabbage, onion skins, celery pieces, cranberry hulls, cranberry tailings, rice hulls, carrot
55 stems, and coffee grounds.

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59 **“Food Residuals”** means pre- and post-consumer food discards from households and the
60 commercial/institutional sector including but not limited to vegetables, fruits, grains, dairy products, meats,
61 and compostable foodservice ware/packaging that may be commingled.

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64
65 **“Mixed Solid Waste”** means a mixture of compostable and non-compostable discards and may contain
66 household and other municipal solid wastes.

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70 **“Source Separated Organics”** means compostable material that has been separated from non-
71 compostable material at the point of generation, including but not limited to yard waste, food residuals,
72 vegetative waste, woody materials, and compostable products.

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74 *****

75
76 **“Vegetative Waste”** means compostable materials generated by the production, harvesting and
77 processing of agricultural or horticultural plants. These residues include but are not limited to stalks,
78 stems, leaves, seed pods, husks, bagasse, and roots. Vegetative waste also includes woody materials
79 and yard waste. Vegetative waste does not include food processing residuals, oil, grease or dairy
80 wastes.

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84 **Woody materials”** means residuals and of cutting trees, including but not limited to tree stumps,
85 sawdust, pallets, and dimensional lumber that has not been treated chemically or with adhesives and
86 coatings such as paint, glue, or any other visible contaminant.

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90 **2) Section 1.2 is being amended by revising the following definitions to read as**
91 **follows:**

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93 **1.2 Definitions**

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97 **“Agricultural wastes”** means all solid wastes resulting from the raising of crops or animals on land
98 zoned agricultural by local requirements, including animal manures, that are returned to the soils as
99 fertilizer, ~~or~~ soil conditioners or compost or are composted to return to the soils. In addition, agricultural
100 waste means all carcasses and carcass by-products resulting from any mass livestock mortality that is the
101 result of an all-hazards event or depopulation ordered by the state veterinarian or other appropriately
102 designated authority.

“Green Waste” means any plant material that is either separated at the point of generation, or separated at a centralized facility. Green waste includes, but is not limited to, yard ~~waste~~trimmings, vegetative plant wastes from the vegetable food processing industry, untreated wood wastes, paper products and pre-consumer vegetative food waste.

“Other Compatible Materials” means the minimum quantity of materials necessary to achieve and maintain an appropriate porosity, moisture level or carbon to nitrogen (C:N) ratio for proper composting. Such materials are limited to Type 1 feedstocks, manure and green wastes as defined in Section 1 and Subsection 14.1.4 14.1.2 of these Regulations, or other materials approved by the Department and governing authority~~body~~.

“Yard Waste” means waste generated from yard maintenance, including garden waste, grass clippings, leaves and branches. Yard waste can also include vegetative materials resulting from the use of commercial products, including but not limited to discarded flowers, potted flowers, or grave blankets that do not include plastic, metal, polystyrene foam, or other nonbiodegradable material.

3) Section 1.2 is being amended by deleting the definition of “Animal material” as follows:

1.2 Definitions

~~**“Animal material”** means any material derived from animal products that are for consumption by humans or animals. The generators of these products include, but are not limited to, agriculture, food manufacturing and processing industries, restaurants, hospitals and food distributors. Animal material does not include manure.~~

4) The existing Section 14 Composting Regulations are being deleted in their entirety and replaced with new Section 14 Composting Regulations to read as follows:

SECTION 14

COMPOSTING

- 14.1 General Provisions
- 14.2 Class I Composting Facilities
- 14.3 Class II Composting Facilities
- 14.4 Class III Composting Facilities
- 14.5 Composting Pilot Projects
- 14.6 Sampling of Finished Compost and Soil Amendments

SECTION 14.1- GENERAL PROVISIONS

14.1.1 Scope and Applicability

This section 14 applies to all persons, local governing authorities, and municipalities who compost solid waste. Compliance with this Section 14 does not relieve any facility owner or operator from his/her obligation to comply with any other applicable federal, state or local statutes, regulations, requirements or ordinances.

Sections 1 and 2 of these Solid Waste Regulations are applicable to all solid waste composting facilities, unless specifically otherwise noted herein. For ease of use, this Section 14 includes those Section 2 requirements that usually apply to the operation of composting facilities; however, there may be unique features at a particular facility that trigger additional site-specific Section 2 requirements not referenced in this Section 14.

Facilities subject to this Section 14 must obtain a certificate of designation (CD) unless otherwise exempt per Section 30-20-102, C.R.S., or these Regulations. The CD will include, at a minimum, the engineering, design and operations plan (EDOP) for the facility required by this Section 14. Facilities that require a CD must follow the CD application process in Section 30-20-103, C.R.S., and these Regulations. See section 1.6 of these Solid Waste Regulations. Facilities subject to this Section 14, but exempt from the requirement to obtain a CD, must provide an EDOP to the Department for review and approval prior to implementation or maintain a Composting Plan onsite. Nothing in this section shall preclude any review action that may be required by the local governing authority under appropriate local ordinance or rule. See sections 1.3.9 and 1.4.1 of these Solid Waste Regulations.

Section 30-20-100.5(1)(a), C.R.S. provides that proper disposal of solid wastes is a matter of mixed statewide and local concern. Because a facility may also need to comply with applicable local requirements in addition to this Section 14, facilities should check with the local governing authority for their submittal, notification, and approval requirements. The phrase "Department and local governing authority approval, as appropriate," as used in this Section 14 acknowledges that the Solid Waste Act and Regulations establish dual jurisdiction over solid waste. Facilities should review Title 30, Article 20, Part 1, C.R.S., and the Solid Waste Regulations to determine which authorities apply. Compliance with this Section 14 shall not relieve the facility owner or operator from the obligation to comply with the facility's CD and any other applicable federal, state or local statute, regulation, requirement or ordinance.

14.1.2 Compost Feedstock Types

The categories described below are not intended to be all-inclusive, but rather are set forth to assist owners and operators in determining the appropriate classification of a proposed or existing composting facility. The Department recognizes that case-by-case determinations may be necessary concerning selection of an appropriate category for a particular feedstock. Accordingly, the Department may require that analytical and/or process information be supplied by the owner or operator to assist in making such determinations.

Type 1: Vegetative waste, and other materials determined by the Department to pose a low risk to human health and the environment.

Type 2: Animal waste, manure, source-separated organics, food residuals and food processing vegetative waste.

Type 3: Biosolids, mixed solid waste, processed solid waste and sludges and food processing residuals not covered in Type 2, fats, oils, greases, dairy manufacturing wastes, dissolved air flotation (DAF) skimmings, paunch and any other compostable material not covered in Type 1 or Type 2.

Prohibited Wastes: Composting facilities may not accept asbestos or asbestos containing materials, infectious waste, hazardous waste, Polychlorinated biphenyl waste or lead-acid batteries.

14.1.3 General Exemptions

This Section 14 does not apply to the following:

- (A) Backyard composting as defined by these Solid Waste Regulations;
- (B) Owner/operators of composting facilities where only agricultural wastes are composted such that:
 - (1) The compost is produced at a manufacturing facility registered by the Colorado Department of Agriculture (CDA), pursuant to § 35-12-101 et seq., C.R.S.; and
 - (2) Finished compost distributed off-site shall meet the specifications for compost established by the CDA.
- (C) The composting of biosolids at a wastewater treatment plant provided that the facility has received a permit in accordance with the Department's Biosolids Regulations No. 64, 5 CCR 1002-64, promulgated pursuant to Section 25-8-205(1)(e), C.R.S.

14.1.4 Conditional Exemptions

(A) Conditionally Exempt Small Quantity Composting Operations: Any composting facility with (1) up to 100 cubic yards of Type 1 feedstock onsite or in process, or (2) any composting facility with up to 100 cubic yards of Type 1 feedstock and up to 5 cubic yards of Type 2 feedstock onsite or in process, or (3) any composting facility with up to 100 cubic yards of Type 1 and up to 10 cubic yards Type 2 feedstock on site or in process when composted in vessel, that complies with the following conditions is exempt from the balance of this Section 14:

- (1) Such facilities must maintain records of feedstock types and quantities for Department inspection;
- (2) Facilities operating commercially must register with the Department as a Conditionally Exempt Small Quantity Composting Facility;
- (3) Facilities operating commercially must submit an annual report to the Department by March 1st each calendar year for the previous calendar year. The report must provide all information required by the Department to properly complete the legislative requirement of collecting waste diversion data including:
 - i. Types of materials recovered for composting; and
 - ii. Amount in tons or cubic yards of material recovered for composting.
- (4) Facilities operating commercially must submit a final closure report to the Department no later than ninety (90) days after ceasing composting operations.
- (5) Facilities operating commercially must sample and test finished compost in accordance with the minimum requirements of Section 14.6 of these Solid Waste Regulations.

(B) Conditionally Exempt Agricultural Composting Operations that compost only agricultural waste generated on-site and imported wood chips, tree branches, sawdust, leaves or untreated lumber that comply with the following are exempt from the balance of this Section 14:

- (1) Importation of wood chips, tree branches, sawdust, leaves or untreated lumber occurs only in quantities necessary for effective composting of the agricultural waste generated on-site;
- (2) Storage of imported wood chips, tree branches, sawdust, leaves or untreated lumber is limited to nine (9) months and the owner/operator of the facility maintains records to demonstrate adherence to this time limit;
- (3) The composting facility is operated in such a manner that noise, dust, and odors do not constitute a nuisance or health hazard and does not cause or contribute to surface or groundwater pollution;
- (4) The owner/operator of the facility registers with the Colorado Department of Agriculture, pursuant to § 35-12-101, et seq., C.R.S.;
- (5) The owner/operator of the facility complies with all Colorado Department of Agriculture requirements and specifications; and
- (6) The finished compost is only used on agricultural zoned property, as defined by the local requirements.

14.1.5 Compliance Schedule

(A) Class II and Class III composting facilities that do not have an EDOP approved after the November 18, 2008 revisions of this Section 14, Solid Waste Composting Regulations, must submit to the Department and the local governing authority, for review and approval, a revised EDOP within eighteen (18) months of the effective date of this Section 14.

(B) Within six (6) months of the effective date of this Section 14, facilities that cannot meet the compliance schedule specified in 14.1.5(A) must make a demonstration to the Department showing why this compliance schedule cannot be met, and must request an alternate schedule for coming into compliance with this Section 14. Such extension shall be subject to Department approval, but the deadline for coming into compliance may be extended no longer than eighteen (18) months after the effective date of this Section 14.

(C) Within twelve (12) months of the effective date of this Section 14, any Class I composting facility must have onsite a completed Composting Plan that complies with Section 14.2.

SECTION 14.2 – CLASS I COMPOSTING FACILITIES

14.2.1 Scope and Applicability

Section 14.2 applies to any persons, local governing authorities, and municipalities who owns or operates a Class I composting facility. A Class I composting facility is a facility that:

(A) Composts only Type 1 feedstocks, and who has less than 50,000 cubic yards of feedstocks and in-process material onsite at any one time (finished compost does not count toward this total); or

(B) Composts only source separated organics and/or food residuals generated onsite together with other compatible materials as defined in Section 1 of these regulations, with the following limits:

1. A total volume of no greater than 5,000 cubic yards of source separated organics onsite at any one time (finished qualified product does not count toward this total); and

321 2. A composting area of two (2) acres in size or less; or

322
323 (C) Composts at the site of generation or on agriculturally zoned property owned by the generator
324 using only agricultural waste generated onsite together with other compatible materials as defined in
325 Section 1 of these regulations and does not meet one of the general exemptions or conditional
326 exemptions in Sections 14.1.3 or 14.1.4.

327 328 329 **14.2.2 Class I Composting Facility Pre-Operations Requirements**

330
331 (A) **Registration:** Prior to commencing composting or feedstock storage, the owner/operator of a
332 Class I composting facility must submit for Department review and approval a registration as a Class I
333 composting facility. Neither composting nor feedstock storage may commence without a current
334 approved Class I composting facility registration. The registration must provide the following
335 information:

336
337 (1) Name of the composting facility, the physical address and legal description, location with
338 respect to the nearest town, and mailing address, if different from physical address;

339
340 (2) Names, addresses, and telephone numbers of the owner and the operator, and at least one
341 person having the authority to take action in the event of an emergency;

342
343 (3) Maximum facility capacity and description and volume estimate of the types of materials to be
344 composted;

345
346 (4) Documentation demonstrating that the local governing authority has approved the composting
347 operation, including all conditions of approval;

348
349 (5) Closure plan demonstrating compliance with Section 14.2.6;

350
351 (B) **Financial Assurance:** Prior to commencing composting or feedstock storage, the owner/operator
352 Class I composting facility must establish financial assurance in accordance with Section 1.8 of these
353 Regulations.

354
355 (C) **Composting Plan:** Prior to commencing composting or feedstock storage, the owner or operator
356 of a Class I composting facility must develop a written Composting Plan for the facility. The
357 Composting Plan must include a description of the site, including site maps and plans drawn to a
358 commonly recognized engineering scale illustrating the facility's surveyed property boundaries,
359 location of processing and storage areas, adjoining properties, roads, fencing, existing and proposed
360 structures, contact water containment and control structures. The Composting Plan must document
361 how the facility meets the requirements of Sections 14.2.3, 14.2.4, 14.2.5, 14.2.6, 14.2.7 and 14.6 of
362 this regulation. The Composting Plan must be maintained at the facility and available for review upon
363 request by the Department or local governing authority during business hours.

364
365 (D) **Certificate of Designation:** Class I composting facilities are not required to obtain a Certificate of
366 Designation from the local governing authority.

367 368 369 **14.2.3 Class I Composting Facility Design Requirements**

370
371 (A) **Surface Water Control:** The Composting Plan for Class I composting facility must describe how
372 the surface water control system features of the facility will be designed, constructed and maintained:

373
374 (1) Prevent negative impacts to surface water and groundwater;

(2) Control surface water, including:

(a) stormwater run on and run off control features with a slope of one (1) to six (6) percent, or meeting other design criteria as approved by the department;

(b) features to contain and manage contact water;

(c) features to prevent contact water from negatively impacting groundwater, as determined by a Colorado licensed professional engineer or a professional geologist;

(d) features to prevent ponding of stormwater and contact water within the composting process area;

(e) features to prevent ponding of stormwater and contact water within the composting process area;

(f) contact water/stormwater containment structures with a minimum of 2 feet of freeboard measured from the lowest elevation at any given time.

(B) Surface Water Control for Class I Composting Facilities Composting Manure, Animal Mortalities and/or Source Separated Organics: In addition to the surface water management requirements in 14.2.3(A), the owner/operator of a Class I composting facility composting manure, animal mortalities and/or source separated organics must design, construct and maintain stormwater and contact water controls that meet the following requirements:

(1) Prevent flow onto the facility during peak discharge from a 25-year, 24- hour storm event;

(2) Control and collect the on-site run-off water volume resulting from a 25- year, 24-hour storm event;

(3) All stormwater/contact water containment structures must be constructed of a minimum of eighteen (18) inches of compacted soil or in-situ earthen material or other low permeability materials (e.g., geomembrane) to achieve a hydraulic conductivity of less than or equal to 1×10^{-6} cm/sec; and

(C) Engineered features or operational plans already approved by the Department would not need to be re-submitted if equivalence is demonstrated (e.g., stormwater control features that meet the requirements in the Confined Animal Feeding Operations Control Regulation, 5 CCR 1002-81).

(D) All engineered features must be reviewed and sealed by a Colorado licensed professional engineer or reviewed and signed by a professional geologist, as appropriate.

14.2.4 Class I Composting Facility Operational Requirements

The owner/operator of a Class I composting facility must operate the facility in accordance with their Department-approved registration, with their Composting Plan, and with the following operational requirements:

(A) The owner/operator of a Class I composting facility must comply with the operational requirements provided in Sections 2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 2.1.7, 2.1.8, 2.1.9, 2.1.11, 2.1.15, 2.1.17, and 2.1.18 of these Solid Waste Regulations;

(B) **Financial Assurance:** The owner/operator of a Class I composting facility must maintain financial assurance in accordance with Section 1.8 of these Regulations.

(C) **Material Acceptance:** The owner/operator of a Class I composting facility may only accept Type 1 feedstocks, or other compatible materials if the composting facility is operating under the provisions of Section 14.2.1(B) or Section 14.2.1(C) and as specified in the approved registration.

(D) **Surface Water Control:** The owner/operator of a Class I composting facility must control surface water entering the site, must prevent contact water from leaving the site, and must manage contact water to ensure groundwater protection. Stormwater leaving the site must be managed through best management practices approved by the Water Quality Control Division's National Pollution Discharge Elimination System Program or stormwater may be managed within the contact water management system. Following a storm event that causes the available capacity of an impoundment to be less than the volume required to store runoff from the designed storm event, the impoundment must be dewatered to a level that restores the required capacity within thirty (30) calendar days. Alternative stormwater and contact water management methods and designs must be approved by the Department. Freeboard must be maintained at a minimum of two (2) feet at all times.

(E) **Access Control:** The owner/operator of a Class I composting facility must control access to prevent illegal dumping, prevent unauthorized access and provide for site security both during and after business hours. Effective artificial barriers or natural barriers may be used in lieu of fencing.

(F) **Nuisance Conditions:** The owner/operator of a Class I composting facility must control on-site and prevent off-site nuisance conditions such as noise, dust, mud, odors, vectors and windblown debris.

(G) **Signage:** The owner/operator of a Class I composting facility shall erect and maintain signage that identifies the facility name, emergency contact information, and the materials that will and will not be accepted, and that ensures adequate traffic control.

(H) **Contingency Plan:** The owner/operator of a Class I composting facility must develop, maintain for current site conditions, and keep available at all times, a contingency plan which outlines the corrective or remedial procedures to be taken in the event of:

- (1) The delivery of unapproved feedstock, bulking material, liquid waste or other waste materials;
- (2) Contamination of surface water or groundwater; and
- (3) The occurrence of nuisance conditions either on-site or off-site.

(I) **Fire Protection:** The owner/operator of a Class I composting facility must properly implement its approved fire protection plan as required by local fire codes, and such plan must be kept current with site conditions and compliant with local fire codes.

(J) **Odor Control:** The owner/operator of a Class I composting facility must develop and implement an odor management plan as necessary to control on-site and prevent off-site nuisance conditions, including the following:

- (1) Develop operational procedures to minimize on-site odors and prevent off-site odors (e.g., incorporating feedstocks with bulking material as soon as practical).
- (2) Develop operational procedures to mitigate odors when they occur either on-site or off-site (e.g., use of biofilters).
- (3) Develop strategies for mitigating off-site odors (e.g., communication with neighbors, responding to complaints within 24 hours).

(K) **Personnel Training:** Class I composting facilities must operate under the control of properly trained individuals. Personnel must be trained to recognize prohibited materials, take action when nuisance conditions occur, and implement emergency procedures when necessary.

(L) **Compost processing time and temperatures:** The owner/operator of a Class I composting facility must ensure that the composting process is sufficient to reduce pathogens and vector attraction. Processes to reduce pathogens and vector attraction must include, but are not limited to:

(1) **Windrow composting:** the compost material must be maintained at a temperature of 55 degrees Celsius (131 degrees Fahrenheit) or higher for fifteen (15) days or longer. The fifteen days do not need to be consecutive. During the period when the compost is maintained at 55 degrees Celsius or higher, there must be a minimum of five (5) turnings of the windrow.

(2) **In-vessel composting:** Compost material must be maintained at a temperature of 55 degrees Celsius (131 degrees Fahrenheit) or higher for three (3) consecutive days.

(3) **Aerated static pile composting process:** All in-process compost must be covered with sufficient insulating material, and the pile must be maintained at a temperature of 55 degrees Celsius (131 degrees Fahrenheit) or higher for a pathogen reduction period of three (3) consecutive days.

(4) **Alternative methods of compliance:** To meet requirements of this section, alternative processing methods may be approved by the Department based on a demonstration that these methods achieve an equivalent pathogen reduction. Vermicomposting is an example of an alternative method of compliance.

(M) **Compost sampling and testing:** The owner/operator of a Class I composting facility must sample and test finished compost in accordance with the minimum requirements of Section 14.6 of these Solid Waste Regulations.

(N) **Feedstock processing areas:** The owner/operator of a Class I composting facility must maintain an all-weather feedstock processing areas of sufficient slope to direct stormwater and contact water to appropriate collection and storage features and prevents significant ponding of water. The feedstock processing areas must be of sufficient construction and firmness so that composting equipment can manage the process without significant damage or failure following inclement weather.

14.2.5 Class I Composting Facility Record Keeping and Reporting Requirements

(A) The owner/operator of a Class I composting facility must complete the Composting Facility Annual Reporting Form and submit to the Department by March 1st of each year for the previous calendar year. The annual report must provide all information required by the Department including:

(1) The types of materials received for composting;

(2) Amount in tons or cubic yards of each material received for composting;

(3) Amount of unprocessed feedstock and feedstock in process onsite at the beginning of the previous calendar year;

(4) Amount of unprocessed feedstock and feedstock in process onsite at the end of the previous calendar year; and

(5) Amount of compost distributed the previous calendar year.

(B) The owner/operator of a Class I composting facility must maintain, at a minimum, the following records;

- (1) Windrow/ pile aeration data;
- (2) Financial assurance documentation;
- (3) Operational monitoring data including time and temperature readings;
- (4) Facility personnel training records;
- (5) Compost analytical data; and
- (6) Feedstock analytical data.

14.2.6 Class I Composting Facility Closure Requirements

(A) Upon closure of a Class I composting facility, the owner/operator of the facility must provide a written notice to the Department no later than ninety (90) days after the facility stops accepting solid waste;

(B) Within one hundred and eighty (180) days of notifying the Department of closure, the owner/operator of a Class I composting facility must remove all waste from the site and dispose of at an appropriate solid waste disposal site; and

(C) Facilities must submit a final report to the Department within ninety (90) calendar days of completing closure.

14.2.7 Class I Composting Facility Post Closure Care and Maintenance

(A) Following closure of the Class I composting facility the owner/operator must conduct post-closure care, which must consist of at least the following:

- (1) Continued monitoring and maintenance as defined in the post-closure plan;
- (2) Inspection and maintenance of any cover material or vegetation; and
- (3) An annual report submitted to the Department and local governing authority detailing post-closure care activities during the prior year.

(B) The post-closure care and maintenance period must be for a minimum of three (3) years. The length of the post-closure care period may be:

- (1) Decreased by the Department after consultation with the local governing authority if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment; or
- (2) Increased by the Department after consultation with the local governing authority if it is determined that the lengthened period is necessary to protect human health and the environment.

(C) Following completion of the post-closure care period the owner or operator must submit a certification signed by an independent professional for approval by the Department and the local

governing authority, verifying that post-closure care has been completed in accordance with the post-closure plan and has been placed in the operating record.

SECTION 14.3 – CLASS II COMPOSTING FACILITIES

14.3.1 Scope and Applicability

Section 14.3 applies to any persons, local governing authorities and municipalities who owns or operates a Class II composting facility. A Class II composting facility is a facility that composts Type 1 feedstocks and manure and has less than 50,000 cubic yards of feedstocks and in-process material onsite at any one time (finished compost does not count toward this total).

14.3.2 Class II Composting Facility Pre-Operations Requirements

(A) **Review and Approval of Engineering Design and Operations Plan:** Prior to commencing composting or feedstock storage, the owner or operator of a Class II composting facility must have an Engineering Design and Operations Plan (EDOP) for the facility approved by the Department and the local governing authority. The EDOP must document how the facility meets the requirements of Sections 14.3.3, 14.3.4, 14.3.5, 14.3.6, 14.3.7, 14.3.8 and 14.6 of this regulation. The EDOP must be maintained at the facility and available for review upon request by the Department or local governing authority during business hours.

(B) **Financial Assurance:** Prior to commencing composting or feedstock storage, the owner/operator Class II composting facility must establish financial assurance in accordance with Section 1.8 of these Regulations.

(C) **Certificate of Designation:** Class II composting facilities are not required to obtain a Certificate of Designation from the local governing authority.

14.3.3 Class II Composting Facility Engineering Design and Operations Plan: General

(A) All portions of the facility design and site investigation must be reviewed and sealed by a Colorado licensed professional engineer or reviewed and signed by a professional geologist, as appropriate.

(B) A Class II composting facility must be designed, constructed, operated, closed and maintained in post closure in accordance with its approved EDOP.

(C) Each EDOP for a Class II composting facility must include, at a minimum:

(1) Names, addresses, and telephone numbers of the owner and operator, and at least one person having the authority to take action in the event of an emergency;

(2) Name of the composting facility, the physical address and legal description, location with respect to the nearest town, and mailing address, if different from physical address;

(3) Site maps and plans drawn to a common recognized engineering scale illustrating the facility's surveyed property boundaries, location of processing and storage areas, adjoining properties, roads, fencing, existing and proposed structures, contact water containment and control structures.

(4) A description of the Type 1 feedstocks and manure to be processed and composted.

(5) An evaluation of potential impacts to existing surface water and groundwater quality, including but not limited to:

- (a) A description of site geological and hydrogeological conditions based on an onsite geotechnical investigation;
- (b) Floodplain information including evidence that the proposed site is not located within a 100-year floodplain;
- (c) Public water supply information including the location of all water supply wells, springs, and surface water intakes within one-half mile of the proposed facility boundary;
- (d) Identification of all lakes, rivers, streams, springs, or bogs, on-site or within one-half mile of the proposed facility boundary;
- (e) Depth to the uppermost aquifer;
- (f) The hydrologic properties of the uppermost aquifer;
- (g) The existing quality of groundwater beneath the proposed facility if groundwater monitoring is required for the facility;
- (h) The types and regional thickness of unconsolidated soils materials;
- (i) The types and regional thickness of consolidated bedrock materials; and
- (j) Geologic hazards such as slope stability, faulting, folding, rockfall, landslides, subsidence or erosion potential.

14.3.4 Class II Composting Facility Design and Operations Plan: Design

(A) **General:** The EDOP for a Class II composting facility must document how the facility will be designed in a manner that:

- (1) Prevents negative impacts to surface water and groundwater;
- (2) Clearly defines the feedstock receiving, processing and storage areas;
- (3) Specifies the maximum throughput capacity;

(B) **Feedstock Processing Areas:** The EDOP for a Class II composting facility must describe how the areas where all mixing, tipping and composting occur will be designed and constructed to:

- (1) Ensure groundwater protection;
- (2) Have a slope of one (1) to six (6) percent, or meets alternative slope design criteria as approved by the department;
- (3) Withstand varying temperatures; and
- (4) Allow for heavy equipment operation other vehicular access, without damage or failure that creates ponding or infiltration of surface water greater than the designed permeability rate; and in some cases:

(5) The Department may require a low permeability workpad area to manage contact water generated from composting operations. Site-specific conditions, operational practices, feedstock, bulking material and liquid wastes will be evaluated to determine the necessity for a low permeability workpad and low permeability liquid mixing pad/basin.

(C) **Surface Water Containment:** The EDOP for a Class II composting facility must describe how the surface water control system features of the facility will be designed, constructed and maintained:

To control stormwater run on and run off during peak discharge from a 25-year, 24-hour storm event;

(1) Such that contact water/stormwater containment structures are designed and maintained with a minimum of 2 feet of freeboard measured from the lowest elevation at any given time;

(2) Such that all stormwater/contact water containment structures must be constructed of a minimum of eighteen (18) inches of compacted soil or in-situ earthen material or other low permeability materials to achieve a hydraulic conductivity of less than or equal to 1×10^{-6} cm/sec. Alternative liner designs that perform in an equivalent manner may be approved by the Department based on a demonstration of the alternative liner design's equivalent performance, the waste type and site specific technical information;

(3) Such that stormwater/contact water containment structure liners are protected to prevent damage from weather and equipment;

(D) **Quality Assurance and Quality Control Plan:** The EDOP for a Class II composting facility must include a quality assurance and quality control plan for all engineered structures at the facility.

(1) The owner/operator of a Class II composting facility must implement their approved quality assurance and quality control plan in constructing all engineered structures at the facility.

(2) The owner/operator of a Class II composting facility must submit a construction certification report to the Department for review and approval, at a minimum, sixty (60) calendar days prior to acceptance of feedstock, liquid waste or bulking material.

(3) The owner/ operator of a Class II composting facility must provide copies of the construction record drawings for engineered features at the site and a report documenting facility construction, including the results of observations and testing carried out as part of the construction quality assurance plan, to the Department and local governing authority.

(4) Class II composting facilities must not commence operation until the Department has determined that the construction was completed in accordance with the approved engineering report/plans and specifications and has approved the construction documentation in writing.

14.3.5 Class II Composting Facility Design and Operations Plan: Operations

Class II composting facilities must comply with their Department-approved EDOP. The EDOP must include the following operation requirements:

(A) **General:** The EDOP for a Class II composting facility must describe how the facility will comply with the operational requirements provided in Sections 2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 2.1.7, 2.1.8, 2.1.9, 2.1.11, 2.1.15, 2.1.17, and 2.1.18 of these Solid Waste Regulations;

(B) **Financial Assurance:** The EDOP for a Class II composting facility must include current financial assurance estimates in accordance with Section 1.8 of these Solid Waste Regulations. A Class II

composting facility must maintain adequate financial assurance in accordance with its EDOP and with Section 1.8 of these Solid Waste Regulations.

(C) **Material Acceptance:** The EDOP for a Class II composting facility must describe the Type 1 feedstocks and manure that the facility accepts. A Class II Composting facility must not accept a feedstock other than those specified in its EDOP or as approved by the department.

(D) **Surface Water Control:** The EDOP for a Class II composting facility must describe how the facility will prevent stormwater and contact water from leaving the site. The EDOP must describe how the impoundment will be dewatered to a level that restores the required capacity within thirty (30) calendar days following a storm event that causes the available capacity of an impoundment to be less than the volume required to store runoff from the designed storm event. Freeboard must be maintained at a minimum of two (2) feet at all times.

(E) **Access Control:** The owner/operator of a Class II composting facility must control access to prevent illegal dumping, prevent unauthorized access and provide for site security both during and after business hours. Effective artificial barriers or natural barriers may be used in lieu of fencing. The EDOP for a Class II composting facility must describe how the facility will comply with this requirement.

(F) **Signage:** The owner/operator of a Class II composting facility shall erect and maintain signage that identifies the facility name, emergency contact information, and the materials that will and will not be accepted, and that ensures adequate traffic control.

(G) **Nuisance Conditions:** A Class II composting facility must control on-site and prevent off-site nuisance conditions such as noise, dust, mud, odors, vectors and windblown debris. The EDOP for a Class II composting facility must describe how the facility will comply with this requirement.

(H) **Contingency Plan:** The EDOP for a Class II composting facility must include a contingency plan which outlines the corrective or remedial procedures to be taken in the event of:

- (1) The delivery of unapproved feedstock, bulking material, liquid waste or other waste materials;
- (2) Contamination of surface water or groundwater; and
- (3) The occurrence of nuisance conditions either on-site or off-site.

(I) **Fire Protection Plan:** A Class II composting facility must comply with local fire codes or, where no local fire code exists or where the local fire code does not provide equivalent or greater level of fire protection, with the fire code currently adopted by the Colorado Division of Fire Prevention and Control in the Department of Public Safety. The EDOP for a Class II composting facility must include a current fire protection plan that describes how the facility will comply with this requirement.

(J) **Odor Management Plan:** The EDOP for a Class II composting facility must include an odor management plan that describes how the facility will control on-site and prevent off-site nuisance conditions, including the following:

- (1) Operational procedures to minimize on-site odors and prevent off-site odors (e.g., incorporating feedstocks with bulking material as soon as practical).
- (2) Operational procedures to mitigate odors when they occur either on-site or off-site (e.g., use of biofilters).
- (3) Strategies for mitigating off-site odors (e.g., communication with neighbors, responding to complaints within 24 hours).

(K) **Personnel Training:** A Class II composting facility must operate under the control of properly trained individuals. Personnel must be trained to recognize prohibited materials, take action when nuisance conditions occur, and implement emergency procedures when necessary. The EDOP for a Class II composting facility must describe how the facility will comply with these requirements.

(L) **Compost processing time and temperatures:** The owner/operator of a composting facility must ensure that the composting process is sufficient to reduce pathogens and vector attraction. The processing methods, including processing times and temperatures must be described in the facility's EDOP per Section 14.6 (testing section). Processes to reduce pathogens and vector attraction must include, but are not limited to:

(1) **Windrow composting:** the compost material must be maintained at a temperature of 55 degrees Celsius (131 degrees Fahrenheit) or higher for fifteen (15) days or longer. The fifteen days do not need to be consecutive. During the period when the compost is maintained at 55 degrees Celsius or higher, there must be a minimum of five (5) turnings of the windrow.

(2) **In-vessel composting:** Compost material must be maintained at a temperature of 55 degrees Celsius (131 degrees Fahrenheit) or higher for three (3) consecutive days.

(3) **Aerated static pile composting process:** All in-process compost must be covered with sufficient insulating material, and the pile must be maintained at a temperature of 55 degrees Celsius (131 degrees Fahrenheit) or higher for a pathogen reduction period of three (3) consecutive days.

(4) **Alternative methods of compliance:** To meet requirements of this section, alternative processing methods may be approved by the Department based on a demonstration that these methods achieve an equivalent pathogen reduction. Vermicomposting is an example of an alternative method of compliance.

(M) **Groundwater Monitoring Plan:** The EDOP for a Class II composting facility must include a Groundwater Monitoring Plan pursuant Section 2.2 of these Solid Waste Regulations. Monitoring parameters will be established based on the hydrogeologic data related to the site, the type of waste stream(s) accepted at the facility and the waste characterization analyses performed on incoming wastes. A Class II composting facility may receive a specific waiver from groundwater monitoring from the Department and local governing authority pursuant to Section 1.5 and Appendix B of these Solid Waste Regulations.

(N) **Compost sampling and testing:** The EDOP for A Class II composting facility must describe how the facility will sample and test finished compost in accordance with the minimum requirements of Section 14.6 of these Solid Waste Regulations.

(O) **Feedstock Processing Areas:** The owner/operator of a Class II composting facility must maintain all weather feedstock processing areas of sufficient slope to direct stormwater and contact water to appropriate collection and storage features and prevents significant ponding of water. The feedstock processing areas must be of sufficient construction and firmness so that composting equipment can manage the process without significant damage or failure following inclement weather.

14.3.6 Class II Composting Facility Design and Operations Plan: Record Keeping and Reporting

(A) The EDOP for a Class II composting facility must include a record keeping and reporting section that describes the records the facility will maintain for department review, including, at a minimum, the following:

- (1) Windrow/ pile aeration data;
- (2) Financial assurance documentation;
- (3) Operational monitoring data including time and temperature readings;
- (4) Engineering Design and Operations Plan;
- (5) Facility personnel records;
- (6) Compost analytical data;
- (7) Feedstock analytical data;
- (8) Liquid waste analytical data;
- (9) The types of materials received for composting;
- (10) Amount in tons or cubic yards of each material received for composting;
- (11) Amount of unprocessed feedstock and feedstock in process onsite at the beginning of the previous calendar year;
- (12) Amount of unprocessed feedstock and feedstock in process onsite at the end of the previous calendar year; and
- (13) Amount of compost distributed the previous calendar year.

(B) A Class II composting facility must complete the Composting Facility Annual Reporting Form and submit to the Department by March 1st of each year for the previous calendar year. The annual report must provide all information required by the Department, including but not limited to the information describe in section 14.3.6(A).

14.3.7 Class II Composting Facility Engineering Design and Operations Plan: Closure

(A)The EDOP for a Class II composting facility must include a closure plan which contains at a minimum a complete and accurate description and schedule of all steps necessary to achieve closure of the composting facility. Such steps must include the following criteria:

- (1) The removal of all stored raw feedstock, bulking material, and liquid waste to a permitted solid waste facility or a facility where the wastes may be beneficially reused with approval from the Department and local governing authority;
- (2) The removal of all other wastes on-site, including those wastes generated by closure activities, to a permitted solid waste facility;
- (3) The removal of all workpad area unless, specifically approved by the Department and local governing authority to remain on-site;
- (4) The removal of all stormwater control and collection structures, unless specifically approved by the Department and local governing authority to remain on-site;
- (5) The removal of all tanks, structures and equipment unless specifically approved by the Department and local governing authority to remain onsite;

(6) Site restoration including regrading and revegetation; and

(7) The removal of partially composted feedstocks and bulking material to a permitted solid waste facility or another compost facility with approval from the Department and local governing authority.

(8) Closure activities must not exceed ninety (90) days in length. Extension of the closure period may be granted by the Department and the local governing authority if the owner or operator demonstrates that closure will, of necessity, take longer than ninety (90) days and all measures necessary to prevent threats to human health and the environment will be taken.

(B) If at any time a composting facility ceases operation, including the discontinued receipt, processing and sale of materials for more than one hundred eighty (180) days, the owner or operator must notify the Department and local governing authority and unless otherwise approved by the Department and the local governing authority, the owner or operator must begin implementation of its Closure Plan. Within fourteen (14) calendar days of commencing implementation of the Closure Plan, the facility must provide written notification to the Department and the local governing authority.

(C) Within thirty (30) calendar days of completing closure activities the owner/operator of the facility must provide written notification to the Department and local governing authority to document that all the requirements and conditions of the closure plan have been achieved.

14.3.8 Class II Composting Facility Engineering Design and Operations Plan: Post Closure Care and Maintenance

(A) Following closure of the Class II composting facility the owner or operator must conduct post-closure care, which must consist of at least the following:

(1) Continued monitoring, sampling and testing of soil, groundwater or surface water as defined in the post-closure plan;

(2) Inspection and maintenance of any cover material or vegetation; and

(3) An annual report submitted to the Department and local governing authority detailing post-closure care activities during the prior year.

(B) The post-closure care and maintenance period must be for a minimum of five (5) years. The length of the post-closure care period may be:

(1) Decreased by the Department after consultation with the local governing authority if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment; or

(2) Increased by the Department after consultation with the local governing authority if it is determined that the lengthened period is necessary to protect human health and the environment.

(C) Following completion of the post-closure care period the owner or operator must submit a certification signed by an independent Colorado licensed professional engineer for approval by the Department and the local governing authority, verifying that post-closure care has been completed in accordance with the post-closure plan and has been placed in the operating record.

14.4 – CLASS III COMPOSTING FACILITIES

14.4.1 Scope and Applicability

Section 14.4 applies to any persons, local governing authorities, and municipalities composting Type 1, Type 2 and Type 3 feedstocks or other materials approved by the Department.

14.4.2 Class III Composting Facility Pre-Operations Requirements

(A) **Review and Approval of Engineering Design and Operations Plan:** Prior to commencing composting or feedstock storage, the owner or operator of a Class III composting facility must have an Engineering Design and Operations Plan (EDOP) for the facility approved by the Department and the local governing authority. The EDOP must document how the facility meets the requirements of Sections 14.4.3, 14.4.4, 14.4.5, 14.4.6, 14.4.7, 14.4.8 and 14.6 of this regulation. The EDOP must be maintained at the facility and available for review upon request by the Department or local governing authority during business hours.

(B) **Financial Assurance:** Prior to commencing composting or feedstock storage, the owner/operator Class III composting facility must establish financial assurance in accordance with Section 1.8 of these Regulations.

(C) **Certificate of Designation:** Class III composting facilities must obtain a Certificate of Designation from the local governing authority.

14.4.3 Class III Composting Facility Engineering Design and Operations Plan: General

(A) All portions of the facility design and site investigation must be reviewed and sealed by a Colorado licensed professional engineer or reviewed and signed by a professional geologist, as appropriate.

(B) A Class III composting facility must be designed, constructed, operated, closed and maintained in post closure in accordance with its approved EDOP.

(C) Each EDOP must include, at a minimum:

(1) Names, addresses, and telephone numbers of the owner and operator, and at least one person having the authority to take action in the event of an emergency;

(2) Name of the composting facility, the physical address and legal description, location with respect to the nearest town, and mailing address, if different from physical address;

(3) Site maps and plans drawn to a common recognized engineering scale illustrating the facility's surveyed property boundaries, location of processing and storage areas, adjoining properties, roads, fencing, existing and proposed structures, contact water containment and control structures.

(4) A description of the feedstocks to be processed and composted.

(5) An evaluation of potential impacts to existing surface water and groundwater quality, including but not limited to:

(a) A description of site geological and hydrogeological conditions based on an onsite geotechnical investigation;

- 1031
- 1032 (b) Floodplain information including evidence that the proposed site is not located within a
- 1033 100-year floodplain;
- 1034
- 1035 (c) Public water supply information including the location of all water supply wells, springs,
- 1036 and surface water intakes within one-half mile of the proposed facility boundary;
- 1037
- 1038 (d) Identification of all lakes, rivers, streams, springs, or bogs, on-site or within one-half mile
- 1039 of the proposed facility boundary;
- 1040
- 1041 (e) Depth to the uppermost aquifer;
- 1042
- 1043 (f) The hydrologic properties of the uppermost aquifer;
- 1044
- 1045 (g) The existing quality of groundwater beneath the proposed facility if groundwater
- 1046 monitoring is required for the facility;
- 1047
- 1048 (h) The types and regional thickness of unconsolidated soils materials;
- 1049
- 1050 (i) The types and regional thickness of consolidated bedrock materials; and
- 1051
- 1052 (j) Geologic hazards such as slope stability, faulting, folding, rockfall, landslides, subsidence
- 1053 or erosion potential.
- 1054
- 1055

1056 **14.4.4 Class III Composting Facility Design and Operations Plan: Design**

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1058 (A) **General:** The EDOP for a Class III composting facility must document how the facility will be

1059 designed in a manner that:

1060

- 1061 (1) Prevents negative impacts to surface water and groundwater;
- 1062
- 1063 (2) Clearly defines the feedstock receiving, processing and storage areas;
- 1064
- 1065 (3) Specifies the maximum throughput capacity;
- 1066

1067 (B) **Feedstock Processing Areas:** The EDOP for a Class III composting facility must describe how

1068 the areas where all mixing, tipping and composting occur will be designed and constructed to:

1069

- 1070 (1) Ensure groundwater protection;
- 1071
- 1072 (2) Have a slope of one (1) to six (6) percent, or meets alternative slope design criteria as
- 1073 approved by the department;
- 1074
- 1075 (3) Withstand varying temperatures; and
- 1076
- 1077 (4) Allow for heavy equipment operation other vehicular access, without damage or failure that
- 1078 creates ponding or infiltration of surface water greater than the designed permeability rate; and in
- 1079 some cases:
- 1080
- 1081 (5) The Department may require a low permeability workpad area to manage contact water
- 1082 generated from composting operations. Site-specific conditions, operational practices, feedstock,
- 1083 bulking material and liquid wastes will be evaluated to determine the necessity for a low
- 1084 permeability workpad and low permeability liquid mixing pad/basin.
- 1085

(C) **Surface Water Containment:** The EDOP for a Class III composting facility must describe how the surface water control system features of the facility will be designed, constructed and maintained:

(1) To control stormwater run on and run off during peak discharge from a 25-year, 24-hour storm event;

(2) Such that contact water/stormwater containment structures are designed and maintained with a minimum of 2 feet of freeboard measured from the lowest elevation at any given time;

(3) Such that all stormwater/contact water containment structures must be constructed of a minimum of eighteen (18) inches of compacted soil or in-situ earthen material or other low permeability materials to achieve a hydraulic conductivity of less than or equal to 1×10^{-6} cm/sec. Alternative liner designs that perform in an equivalent manner may be approved by the Department based on a demonstration of the alternative liner design's equivalent performance, the waste type and site specific technical information;

(4) Such that stormwater/contact water containment structure liners are protected to prevent damage from weather and equipment;

(D) **Quality Assurance and Quality Control Plan:** The EDOP for a Class III composting facility must include a quality assurance and quality control plan for all engineered structures at the facility.

(1) The Owner/Operator of a Class III composting facility must implement their approved quality assurance and quality control plan in constructing all engineered structures at the facility.

(2) The Owner/Operator of a Class III composting facility must submit a construction certification report to the Department for review and approval, at a minimum, sixty (60) calendar days prior to acceptance of feedstock, liquid waste or bulking material.

(3) The owner or operator of a Class III composting facility must provide copies of the construction record drawings for engineered features at the site and a report documenting facility construction, including the results of observations and testing carried out as part of the construction quality assurance plan, to the Department and local governing authority.

(4) Class III composting facilities must not commence operation until the Department has determined that the construction was completed in accordance with the approved engineering report/plans and specifications and has approved the construction documentation in writing.

14.4.5 Class III Composting Facility Design and Operations Plan: Operations

Class III composting facilities must comply with their Department-approved EDOP. The EDOP must include the following operation requirements:

(A) **General:** The EDOP for a Class III composting facility must describe how the facility will comply with the operational requirements provided in Sections 2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 2.1.7, 2.1.8, 2.1.9, 2.1.11, 2.1.15, 2.1.17, and 2.1.18 of these Solid Waste Regulations:

(B) **Financial Assurance:** The EDOP for a Class III composting facility must include current financial assurance estimates in accordance with Section 1.8 of these Solid Waste Regulations. A Class III composting facility must maintain adequate financial assurance in accordance with its EDOP and with Section 1.8 of these Solid Waste Regulations.

(C) **Material Acceptance:** The EDOP for a Class III composting facility must describe the feedstocks that the facility accepts. A Class III Composting facility must not accept a feedstock other than those

specified in its EDOP or as approved by the department. The EDOP for a facility that accepts sludges, liquid waste or materials not identified in Section 14.1.2 of the Solid Waste Regulations must include a waste characterization plan that meets the procedural requirements of Section 2.1.2(C)(2), (3), and (4) of these Solid Waste Regulations to ensure protection of human health and the environment.

(D) **Surface Water Control:** The EDOP for a Class III composting facility must describe how the facility will prevent stormwater and contact water from leaving the site. The EDOP must describe how the impoundment will be dewatered to a level that restores the required capacity within thirty (30) calendar days following a storm event that causes the available capacity of an impoundment to be less than the volume required to store runoff from the designed storm event. Freeboard must be maintained at a minimum of two (2) feet at all times.

(E) **Access Control:** A Class III composting facility must control access to prevent illegal dumping, prevent unauthorized access and provide for site security both during and after business hours. Effective artificial barriers or natural barriers may be used in lieu of fencing. The EDOP for a Class III composting facility must describe how the facility will comply with this requirement.

(F) **Signage:** The owner/operator of a Class III composting facility shall erect and maintain signage that identifies the facility name, emergency contact information, and the materials that will and will not be accepted, and that ensures adequate traffic control.

(G) **Nuisance Conditions:** A Class III composting facility must control on-site and prevent off-site nuisance conditions such as noise, dust, mud, odors, vectors and windblown debris. The EDOP for a Class III composting facility must describe how the facility will comply with this requirement.

(H) **Contingency Plan:** The EDOP for a Class III composting facility must include a contingency plan which outlines the corrective or remedial procedures to be taken in the event of:

- (1) The delivery of unapproved feedstock, bulking material, liquid waste or other waste materials;
- (2) Contamination of surface water or groundwater; and
- (3) The occurrence of nuisance conditions either on-site or off-site.

(I) **Fire Protection Plan:** The owner/operator of a Class III composting facility must comply with local fire codes or, where no local fire code exists or where the local fire code does not provide equivalent or greater level of fire protection, with the fire code currently adopted by the Colorado Division of Fire Prevention and Control in the Department of Public Safety. The EDOP for a Class III composting facility must include a current fire protection plan that describes how the facility will comply with this requirement.

(J) **Odor Management Plan:** The EDOP for a Class III composting facility must include an odor management plan that describes how the facility will control on-site and prevent off-site nuisance conditions, including the following:

- (1) Operational procedures to minimize on-site odors and prevent off-site odors (e.g., incorporating feedstocks with bulking material as soon as practical).
- (2) Operational procedures to mitigate odors when they occur either on-site or off-site (e.g., use of biofilters).
- (3) Strategies for mitigating off-site odors (e.g., communication with neighbors, responding to complaints within 24 hours).

(K) **Personnel Training:** A Class III composting facility must operate under the control of properly trained individuals. Personnel must be trained to recognize prohibited materials, take action when nuisance conditions occur, and implement emergency procedures when necessary. The EDOP for a Class III composting facility must describe how the facility will comply with these requirements.

(L) **Compost processing time and temperatures:** The owner/operator of a composting facility must ensure that the composting process is sufficient to reduce pathogens and vector attraction. The processing methods, including processing times and temperatures must be described in the facility's EDOP per Section 14.6 (testing section). Processes to reduce pathogens and vector attraction must include, but are not limited to:

(1) **Windrow composting:** the compost material must be maintained at a temperature of 55 degrees Celsius (131 degrees Fahrenheit) or higher for fifteen (15) days or longer. The fifteen days do not need to be consecutive. During the period when the compost is maintained at 55 degrees Celsius or higher, there must be a minimum of five (5) turnings of the windrow.

(2) **In-vessel composting:** Compost material must be maintained at a temperature of 55 degrees Celsius (131 degrees Fahrenheit) or higher for three (3) consecutive days.

(3) **Aerated static pile composting process:** All in-process compost must be covered with sufficient insulating material, and the pile must be maintained at a temperature of 55 degrees Celsius (131 degrees Fahrenheit) or higher for a pathogen reduction period of three (3) consecutive days.

(4) **Alternative methods of compliance:** To meet requirements of this section, alternative processing methods may be approved by the Department based on a demonstration that these methods achieve an equivalent pathogen reduction. Vermicomposting is an example of an alternative method of compliance.

(M) **Groundwater Monitoring Plan:** The EDOP for a Class III composting facility must include a Groundwater Monitoring Plan pursuant Section 2.2 of these Solid Waste Regulations. Monitoring parameters will be established based on the hydrogeologic data related to the site, the type of waste stream(s) accepted at the facility and the waste characterization analyses performed on incoming wastes. A Class III composting facility may receive a specific waiver from groundwater monitoring from the Department and local governing authority pursuant to Section 1.5 and Appendix B of these Solid Waste Regulations.

(N) **Compost sampling and testing:** The EDOP for A Class III composting facility must describe how the facility will sample and test finished compost in accordance with the minimum requirements of Section 14.6 of these Solid Waste Regulations.

(O) **Feedstock Processing Areas:** The owner/operator of a Class III composting facility must maintain all weather feedstock processing areas of sufficient slope to direct stormwater and contact water to appropriate collection and storage features and prevents significant ponding of water. The feedstock processing areas must be of sufficient construction and firmness so that composting equipment can manage the process without significant damage or failure following inclement weather.

14.4.6 Class III Composting Facility Design and Operations Plan: Record Keeping and Reporting

(A) The EDOP for a Class III composting facility must include a record keeping and reporting section that describes the records the facility will maintain for department review, including, at a minimum, the following:

- (1) Windrow/ pile aeration data;
- (2) Financial assurance documentation;
- (3) Operational monitoring data including time and temperature readings;
- (4) Engineering Design and Operations Plan;
- (5) Facility personnel records;
- (6) Compost analytical data;
- (7) Feedstock analytical data;
- (8) Liquid waste analytical data;
- (9) The types of materials received for composting;
- (10) Amount in tons or cubic yards of each material received for composting;
- (11) Amount of unprocessed feedstock and feedstock in process onsite at the beginning of the previous calendar year;
- (12) Amount of unprocessed feedstock and feedstock in process onsite at the end of the previous calendar year; and
- (13) Amount of compost distributed the previous calendar year.

(B) A Class III composting facility must complete the Composting Facility Annual Reporting Form and submit to the Department by March 1st of each year for the previous calendar year. The annual report must provide all information required by the Department, including but not limited to the information describe in section 14.4.6(A).

14.4.7 Class III Composting Facility Design and Operations Plan: Closure

(A) The EDOP for a Class III composting facility must include a closure plan which contains at a minimum a complete and accurate description and schedule of all steps necessary to achieve closure of the composting facility. Such steps must include the following criteria:

- (1) The removal of all stored raw feedstock, bulking material, and liquid waste to a permitted solid waste facility or a facility where the wastes may be beneficially reused with approval from the Department and local governing authority;
- (2) The removal of all other wastes on-site, including those wastes generated by closure activities, to a permitted solid waste facility;
- (3) The removal of all workpad area unless, specifically approved by the Department and local governing authority to remain on-site;

(4) The removal of all stormwater control and collection structures, unless specifically approved by the Department and local governing authority to remain on-site;

(5) The removal of all tanks, structures and equipment unless specifically approved by the Department and local governing authority to remain on-site;

(6) Site restoration including regrading and revegetation; and

(7) The removal of partially composted feedstocks and bulking material to a permitted solid waste facility or another compost facility with approval from the Department and local governing authority.

(8) Closure activities must not exceed ninety (90) days in length. Extension of the closure period may be granted by the Department and the local governing authority if the owner or operator demonstrates that closure will, of necessity, take longer than ninety (90) days and all measures necessary to prevent threats to human health and the environment will be taken.

(B) If at any time a composting facility ceases operation, including the discontinued receipt, processing and sale of materials for more than one hundred eighty (180) days, the owner or operator must notify the Department and local governing authority and unless otherwise approved by the Department and the local governing authority, the owner or operator must begin implementation of its Closure Plan. Within fourteen (14) calendar days of commencing implementation of the Closure Plan, the facility must provide written notification to the Department and the local governing authority.

(C) Within thirty (30) calendar days of completing closure activities the owner/operator of the facility must provide written notification to the Department and local governing authority to document that all the requirements and conditions of the closure plan have been achieved.

14.4.8 Class III Composting Facility Design and Operations Plan: Post Closure Care and Maintenance

(A) Following closure of the Class III composting facility the owner or operator must conduct post-closure care, which must consist of at least the following:

(1) Continued monitoring, sampling and testing of soil, groundwater or surface water as defined in the post-closure plan;

(2) Inspection and maintenance of any cover material or vegetation; and

(3) An annual report submitted to the Department and local governing authority detailing post-closure care activities during the prior year.

(B) The post-closure care and maintenance period must be for a minimum of five (5) years. The length of the post-closure care period may be:

(1) Decreased by the Department after consultation with the local governing authority if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment; or

(2) Increased by the Department after consultation with the local governing authority if it is determined that the lengthened period is necessary to protect human health and the environment.

(C) Following completion of the post-closure care period the owner or operator must submit a certification signed by an independent Colorado licensed professional engineer for approval by the Department and the local governing authority, verifying that post-closure care has been completed in accordance with the post-closure plan and has been placed in the operating record.

14.5 – COMPOSTING PILOT PROJECTS

(A) The Department will consider composting pilot projects on a case-by-case basis. Composting pilot projects must be performed for the following purposes:

- (1) Academic research;
- (2) Compost market analysis;
- (3) Determining composting method viability; or
- (4) Other as approved by the Department.

(B) Composting pilot project must demonstrate that they meet the design and operations requirements for the corresponding facility classification based on feedstock type collected.

(C) Composting pilot project must not exceed two (2) years in length without written approval from the Department.

14.6 – SAMPLING OF FINISHED COMPOST AND SOILS AMENDMENTS

(A) **Compost Standards:** The owner or operator of any class of compost facility (unless exempt under Section 14.1.3) must ensure that compost to be sold or distributed for off-site use meets the standards set forth in Table 1 of this Section 14, and with Section 14.6 below. Compliance with these standards must not relieve any owner or operator from their obligation to comply with any other applicable agency standards, such as those of the Colorado Department of Agriculture.

(B) Compost facilities processing mixed solid waste must remove non-compostable waste prior to product distribution.

(C) Facilities composting to create soil amendments may submit a request for alternative testing requirements to the Division and local governing authority for review and approval. Alternative testing demonstrations must include an agronomic evaluation with examples of application rates for specific crop types and a demonstration that the beneficial use of the soil amendment will not have a greater impact to public health and the environment than similar products on the market used for similar purposes.

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TABLE 1
Maximum Constituent Concentration For Compost
Sold Or Distributed For Off-site Use
(mg/kg dry weight basis)

CONSTITUENTS	MAXIMUM LEVEL
INORGANICS¹ (mg/kg)	
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2800
BIOLOGICAL	
Fecal coliform	see 14.6 (D)
Salmonella	see 14.6 (D)

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¹Inorganic Methodology: Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW-846) Third Edition, December 1996: As, Cd, Cu, Pb, Ni, Se and Zn by Method 6010 or 7000. Hg by 7471. These documents are available for review at the Colorado Department of Public Health and Environment (See § 1.1.2 of these Regulations) and the State Publications Depository Libraries.

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(D) The owner or operator of a composting facility must ensure that:

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(1) The density of the fecal coliform present in the compost is less than 1000 Most Probable Number per gram of total solids (dry weight basis); or

(2) The density of Salmonella sp. bacteria in the compost is less than three (3) Most Probable Number per four (4) grams of total solids (dry weight basis) at the time the compost is to be sold or otherwise distributed for use; or

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(3) An owner/operator of a composting facility may receive an approval from the Department and local governing authority for alternate testing after demonstrating how the alternative testing is protective of human health and the environment.

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(E) **Sampling Frequency:** Finished compost must be sampled and tested once every 10,000 cubic yards of compost produced, or annually, whichever is more frequent. The Department, in consultation with the local governing authority, may impose site-specific EDOP provisions requiring a greater testing frequency on finished compost, especially from a Class III composting facility, in cases where the feedstocks and liquid waste accepted or the compost process warrants greater frequency.

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(F) **Reintroduction of Finished Product into Compost Process:** Finished compost which has been sampled and tested, but to which raw or partially composted feedstock, bulking material, or liquid waste is added prior to, or during distribution, must be reintroduced into the composting process, re-sampled and re-tested prior to commencing or continuing distribution.

(G) **Sampling Methodology:** Sample collection, preservation, and analysis must assure valid and representative analytical results. Sampling procedures must be described in the facility's design and operation plan.

(H) **Additional Testing:** The Department may require additional testing of finished compost for constituents not found in Table 1 and at a frequency greater than specified in Section 14.6(E) of this Section 14.

(I) **Exceedances:** Compost that exceeds the levels specified in Table 1 or as specified in the approved EDOP must be:

- (1) Reintroduced into the composting process; or
- (2) Disposed of at a permitted solid waste disposal facility; or
- (3) Otherwise used in a manner approved by the Department and local governing authority.

(J) **Unrestricted Use:** Compost that satisfies the levels specified in Table 1 and all other parameters identified by the Department per Section 14.6 is determined by these criteria to be finished compost and acceptable for unrestricted use. The finished compost is considered to be a product not a waste, and is no longer subject to these Solid Waste Regulations. For those additional constituents identified by the Department under Section 14.6 and not found on Table 1, the Department will approve protective unrestricted use constituent concentrations.