

Ga. Comp. R. & Regs. r. 391-3-4-.16 Composting, Mulching and Anaerobic Digestion Facilities
Georgia Administrative Code
Department 391. RULES OF GEORGIA DEPARTMENT OF NATURAL RESOURCES
Chapter 391-3. ENVIRONMENTAL PROTECTION
Subject 391-3-4. SOLID WASTE MANAGEMENT

Current through Rules and Regulations filed through December 13, 2019

Rule 391-3-4-.16. Composting, Mulching and Anaerobic Digestion Facilities

- (1) Composting is a desirable means of reducing the amount of solid waste destined for disposal. All composting facilities not exempted in [391-3-4-.16\(3\)](#) shall either be regulated under Permit-by-Rule in [391-3-4-.16\(5\)\(b\)](#) or shall obtain a Solid Waste Handling Permit in accordance with either [391-3-4-.16\(5\)\(c\)](#), [391-3-4-.16\(5\)\(d\)](#), [391-3-4-.16\(5\)\(e\)](#), or [391-3-4-.16\(5\)\(f\)](#) depending on the technology employed and feedstocks processed.
- (a) Composting facilities in existence on the effective date of this Rule may continue to operate until March 31, 2015 under their existing permit, or Permit-by-Rule, before demonstrating compliance under conditions (i) - (vii) of this section. Existing facilities requesting major modifications after the effective date of this Rule must fully comply with this Rule. Facilities that cannot demonstrate compliance with conditions (i) - (vii) of this section by March 31, 2015 shall initiate closure.
- (i) Existing Permit-by-Rule composting facilities that meet the criteria of [391-3-4-.16\(5\)\(b\)1.](#) must comply with the operating standards of Class 2 Composting Facilities, but are exempted from the design standards of Class 2 Composting Facilities.
- (ii) Existing permitted composting facilities that classify as Class 3 Composting Facilities in [391-3-4-.16\(5\)\(c\)1. and 2.](#) must comply with the operating standards of Class 3 facilities, but are exempted from the design standards of Class 3 facilities.
- (iii) Existing permitted composting facilities that classify as Class 4 Composting Facilities in [391-3-4-.16\(5\)\(d\)1. and 2.](#) must comply with the operating standards of Class 3 and Class 4 facilities, but are exempted from the design standards of Class 3 and Class 4 facilities.
- (iv) Existing permitted composting facilities that classify as Class 5 Composting Facilities in [391-3-4-.16\(5\)\(e\)1.](#) must comply with the operating standards of Class 3, Class 4, and Class 5 facilities, but are exempted from the design standards of Class 3, Class 4, and Class 5 facilities.
- (v) Existing permitted composting facilities that classify as Class 6 In-vessel Composting and Anaerobic Digestion Facilities in [391-3-4-.16\(5\)\(f\)1.](#) must comply with the operating standards of Class 6 facilities, but are exempted from the design standards of Class 6 facilities.
- (vi) All existing composting and anaerobic digestion facilities are exempt from the siting criteria of [391-3-4-.16\(6\)](#), unless applying for a major modification as in [391-3-4-](#)

.16(7)(a)1. or 2.

- (vii) All existing composting and anaerobic digestion facilities, other than those operating as Permit-by-Rule facilities, must comply with the testing requirements of 391-3-4-.16(8).

(2) Definitions. For the purposes of this Rule:

- (a) "Aerated Static Pile Composting" means a process in which decomposing organic material is placed in piles over an air distribution system to supply oxygen for the purpose of producing compost.
- (b) "Agricultural Residuals" means the residuals from customary and generally accepted activities, practices, and procedures that farmers adopt, use, or engage in during the production and preparation for market of poultry, livestock, and associated farm products; and in the production and harvesting of agricultural crops, which include agronomic, horticultural, and silvicultural crops, and residuals resulting from aquacultural activities. It also includes residuals from harvesting and production of row crops and manures. The term does not include dead animals, wastewater or special wastes, such as waste oils or other lubricants, unused fertilizers, pesticides, or pesticide containers.
- (c) "Anaerobic Digester" means an enclosed vessel that processes organic material under anaerobic conditions to produce biogas and digestate.
- (d) "Anaerobic Digestion" means the controlled decomposition of organic material under anaerobic conditions in an anaerobic digester to produce biogas and digestate.
- (e) "Backyard Composting" means composting of yard trimmings and food residuals, managed so as not to attract vectors, at residential, commercial, or industrial property by the owner or tenant for use on site. All feedstocks must be generated and composted on site.
- (f) "Biogas" means gas generated by anaerobic digestion.
- (g) "Compost" means a stabilized organic product produced by a controlled aerobic decomposition process that can be used as a soil additive, fertilizer, growth media or other beneficial use.
- (h) "Composting Facility" means buildings, grounds and equipment dedicated to the manufacture of compost.
- (i) "Contact Water" means a liquid that has passed through or emerged from raw feedstocks and materials that are being processed; liquid that has come into contact with equipment that is dedicated to the composting or anaerobic digestion process; and which contains extracted, dissolved or suspended materials. Contact water also includes condensate from gases resulting from the composting and the anaerobic digestion processes.
- (j) "Curing" means, for the purposes of composting and anaerobic digestion, a continuation of the composting process after the high heat stage during which stability and maturity continue

to increase. For the purposes of these regulations, compost enters the curing stage after completing the process to further reduce pathogens.

- (k) "Digestate" means the residual solids or liquids remaining after organic material has been processed in an anaerobic digester.
- (l) "Feedstock" means any organic material used in the production of mulch or compost or processed in an anaerobic digester. Feedstocks shall not include additives or amendments that are not part of the composting process.
- (m) "Food Processing Residuals" means organic material generated as a by-product of the food-processing sector that is non-hazardous and contains no domestic wastewater. For the purposes of these regulations, the term applies to use as a feedstock in the composting or anaerobic digestion process and does not include dissolved air flotation (DAF) skimmings or fats, oil, and greases.
- (n) "Food Residuals" means pre- and post-consumer food used as a feedstock in a composting or anaerobic digestion facility.
- (o) "Industrial By-product" means organic materials generated by manufacturing or industrial processes that are non-hazardous, contain no domestic wastewater, and pass the paint filter test.
- (p) "In-vessel Composting" means the aerobic decomposition of organic material in an enclosed container for the purpose of producing compost.
- (q) "Maturity" means a measure of the degree of completion of the composting process.
- (r) "Mulching" means the grinding, shredding or chipping of woody materials consisting of stumps, trees, limbs, branches, bark, leaves and other clean wood that has not undergone controlled aerobic decomposition to produce a stabilized organic product.
- (s) "Source-separated Organics" means organic material including, but not limited to, food residuals, food processing residuals, and compostable paper that has been separated from non-compostable material.
- (t) "Stability" means the inverse measure of the potential for a material to rapidly decompose that is measured by indicators of microbial activity, such as carbon dioxide production, oxygen uptake, or self-heating.

(3) Exemptions.

- (a) The following mulching and composting operations are exempt from a Solid Waste Handling Permit:
 1. Backyard composting.
 2. A facility composting or mulching only Category A feedstock.

3. A facility processing less than 40 tons per year of food residuals generated on site and composted in leak-proof containers that prohibit vector attraction and prevent nuisance odor generation.
4. Composting of food residuals and yard trimmings generated on site at a K-12 institution for educational purposes.
5. Composting of biosolids at a treatment works regulated by a National Pollutant Discharge Elimination System (NPDES) permit, Land Application System (LAS) permit, or other permit from EPD, and in which case that permit has been modified in accordance with the Georgia Rules for Water Quality Control [391-3-6-.17\(3\)\(c\)1.](#) to incorporate any necessary requirements for regulating the composting operation.
6. Composting of dead animals, provided such composting is in accordance with the requirements of the Georgia Dead Animal Disposal Act (O.C.G.A. § 4-5) and Georgia Department of Agriculture Rules (Chapter 40-13-5).
7. Anaerobic digestion facilities that are permitted in accordance with the Georgia Rules for Water Quality Control. These include facilities located at a wastewater treatment plant and on-farm anaerobic digesters or lagoons.
8. Manures managed in accordance with the Georgia Rules for Water Quality Control.

(4) Feedstock Categories.

- (a) The categories described below are not intended to be all-inclusive. Case-by-case determinations by the Division may be necessary concerning selection of the appropriate category for a particular feedstock, including industrial by-products not elsewhere classified. Accordingly, the Division may require that analytical and/or process information be supplied by the owner or operator to assist in making such determinations. At a minimum, the Division will require applicants to provide an analysis of metals and proof of compostability of the potential feedstock, including C:N ratio and soluble salts.
 1. Feedstock Category A: Yard trimmings, land-clearing debris, agricultural residuals generated and processed on site, untreated and unpainted wood, or any combination thereof.
 2. Feedstock Category B: Agricultural residuals generated off site, herbivorous animal manure generated at a zoo, and/or source-separated organics.
 3. Feedstock Category C: Sewage sludge and biosolids not managed as part of a treatment works under an NPDES or LAS permit.
 4. Feedstock Category D: Dissolved air flotation (DAF) skimmings or sludge generated from food processing and dewatered septage.
- (b) Prohibited feedstocks include:

1. Asbestos-containing wastes.
2. Biomedical wastes.
3. Painted and treated wood.
4. Any other prohibited wastes included in [391-3-4-.04\(6\)](#).

(5) Design and Operating Standards for Composting Facilities by Class.

(a) Class 1 Composting and Mulching Facilities

1. Facilities composting, grinding, chipping, and/or mulching only Category A feedstock do not require a Solid Waste Handling Permit. A permitted solid waste handling facility shall submit a minor modification prior to adding a Class 1 composting operation on site.

(b) Class 2 Composting Facilities

1. Facilities composting Category A and B feedstocks that meet both of the following criteria may operate under a Permit-by-Rule for Composting Facilities:
 - (i) Facilities receiving less than 500 tons of Category B feedstock per calendar month.
 - (ii) For Class 2 facilities, Category B feedstocks shall be restricted to exclude the receipt of non-vegetative food processing residuals and manures.
2. The design standards for Class 2 facilities include:
 - (i) The composting area shall be constructed to maintain its structural integrity under operating conditions and be capable of supporting vehicular traffic.
 - (ii) The composting facility shall be adequate in size and capacity to manage the projected volume of compost and residue generated. The areas for storing feedstocks prior to processing shall be clearly defined and the maximum capacity specified.
 - (iii) For windrow operations, the maximum composting process windrow size and minimum composting process windrow spacing shall match the capability and requirements of the equipment used at the facility.
3. The operating standards for Class 2 facilities include:
 - (i) The composting facility shall have a sign at its entrance that lists the name of the facility, hours of operation, feedstocks accepted, and emergency contact information.
 - (ii) The composting facility shall have storm water control measures.

- (iii) The composting facility shall prevent flow of contact water from the active composting area into surface water and curing or finished compost areas.
- (iv) Suitable measures to control vectors shall be applied.
- (v) Suitable measures to control odors shall be applied.
- (vi) Suitable measures to prevent, control, and extinguish fires shall be applied.
- (vii) By the end of each operating day, all incoming Category B feedstock must be processed into the active composting area, transferred to leak-proof containment, or mixed with bulking material and covered in a manner that minimizes nuisance odors and scavenging by vectors.
- (viii) No material shall be stored in excess of the designated capacity.
- (ix) Storage of finished compost on site is limited to 12 months, unless approved by the Division on a case-by-case basis.
- (x) Non-compostable material and solid waste generated on site shall be stored in a waste container and then either recycled or disposed of at a permitted solid waste facility.
- (xi) Facilities accepting Category B feedstocks from off site shall track incoming feedstocks and finished compost. Records documenting compliance of the composting facility with these Rules shall be kept for a minimum of three years in a form suitable for submission to or inspection by the Division. Records shall include the weight or volume (in tons or cubic yards) of the feedstocks accepted, total compost produced, and any amount sold or used. Records shall be retained at the composting facility unless an off- site storage location is approved by the Division.
- (xii) Operation and management shall be under the supervision and control of an individual properly trained in the operation of such facilities at all times. Facility operations managers must be able to document training in the basics of composting facility operations.
- (xiii) Notice of final closure shall be provided to the Director within 60 days from final receipt of feedstock. Any site not receiving feedstock in excess of 180 days, unless properly closed or otherwise approved by the Division, shall be deemed closed and in violation of these Rules. Notice of closure shall include documentation that all feedstocks and active, curing, and final compost materials have been removed from the facility and that the site has been stabilized in accordance with the Manual for Erosion and Sediment Control in Georgia.

(c) Class 3 Composting Facilities

1. Any composting facility that is neither exempt under [391-3-4-.16\(3\)](#), nor meets the conditions for Class 2 Composting Facilities in [391-3-4-.16\(5\)\(b\)](#), shall obtain a permit in accordance with following requirements:
2. Class 3 composting facilities may compost Category A and B feedstocks.
3. The design standards for Class 3 facilities include:
 - (i) The composting facility shall be designed by a professional engineer licensed to practice in Georgia.
 - (ii) An all-weather compost pad shall be designed, constructed, and maintained to (1) prevent ponding and impede downward migration of potential contaminants from contact water; (2) reliably transmit any free liquid present during the storage, treatment, and processing of materials laterally to a containment structure to prevent liquids from entering surface water or groundwater; (3) support vehicular traffic; and (4) prevent conditions that could contribute to or cause contamination.
 - (iii) Surfaces on which composting takes place shall be graded with a slope between 2% and 6% to prevent ponding of water.
 - (iv) The site shall be graded to prevent the flow of water from the active composting area into curing or finished compost areas.
 - (v) Prior to receiving feedstocks, the Division shall be provided with written certification by a professional engineer licensed to practice in Georgia, that the facility has been constructed in accordance with the approved permit. Unless notified otherwise by the Division, within 15 days of receipt of the written certification, the facility owner or operator may commence composting operations.
 - (vi) The owner or operator shall fully satisfy all applicable financial responsibility requirements, as provided by Chapter [391-3-4-.13](#). The financial assurance mechanism shall be updated at least annually for inflation and for any modifications required and approved by the Division.
 - (vii) An as-built survey of the facility, prepared by a Georgia-registered professional surveyor, shall be submitted with the engineering certification.
 - (viii) Contact water collection and removal systems shall be designed for incorporating the liquid back into the compost piles or for removal and treatment in a manner approved by the Division. Contact water may be used in the composting operation for moisture addition only in active compost piles that have not completed the process to further reduce pathogens.
 - (ix) The maximum composting process windrow size and minimum composting process windrow spacing shall match the capability and requirements of the

equipment used at the facility.

(x) The composting facility shall submit a site-specific odor minimization plan that includes, at a minimum, the following:

(I) A complaint response protocol.

(II) A description of operating procedures for minimizing odor.

(I) A description of the processes and technologies used to control odors.

(IV) A description of procedures to monitor odor, including sampling frequencies and method(s) used to measure odors.

(xi) The composting facility shall submit a contingency plan detailing corrective or remedial actions to be taken in the event of equipment breakdown; odors; unacceptable waste delivered to the facility; spills; and other undesirable conditions such as fire, dust, noise, vectors, unusual traffic conditions, and litter. The plan shall also include the proposed emergency provisions for equipment breakdown or power failure.

4. The operating standards for Class 3 include:

(i) Operation and management shall be under the supervision and control of an individual properly trained in the operation of such facilities at all times. Facility operations managers must be able to document training in the basics of composting facility operations.

(ii) The facility shall install and maintain storm water management controls.

(iii) Suitable measures to control vectors shall be applied.

(iv) Suitable measures to prevent, control, and extinguish fires shall be applied.

(v) By the end of each operating day, all incoming Category B feedstock shall be processed into the active composting area, transferred to leak-proof containment, or mixed with bulking material and covered in a manner that minimizes nuisance odors and scavenging by vectors. Prior to being incorporated into the active composting area, feedstocks with free liquid shall be mixed with drier feedstocks, bulking material, or compost so that the liquid is promptly absorbed and not allowed to flow from the mixing area.

(vi) Compost processing time and temperatures shall be sufficient to kill weed seeds, reduce pathogens and vector attraction, and produce compost that meets the stability necessary for the intended use. Pathogen and vector attraction reduction compliance shall be achieved as follows:

- (I) Windrow composting: The compost material shall be maintained at a minimum average temperature of 55°C or higher for 15 days or longer. During the period when the compost is maintained at 55°C or higher, there shall be a minimum of five turnings of the windrow. The 15 or more days at or above 55°C do not have to be continuous.
 - (II) Aerated static pile or in-vessel composting: The compost material shall be maintained at a minimum average temperature of 55°C or higher for three consecutive days, followed by at least 14 days at over 40°C with an average temperature of over 45°C.
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- (vii) Facilities using aerated static piles shall insulate piles to ensure that all parts of the decomposing material reach and maintain temperatures at or above 55°C for a minimum of three days.
 - (viii) The all-weather compost pad must be maintained to its specified slope and resist deformation that would cause ponding or increase infiltration of contact water.
 - (ix) Storage of finished compost on site is limited to 12 months, unless approved by the Division on a case-by-case basis.
 - (x) Non-compostable material and solid waste generated on site shall be stored in a waste container and then either recycled or disposed of at a permitted solid waste facility.
 - (xi) Records shall be maintained to track incoming feedstocks and finished compost. By September 1 of each year, operators shall submit a report to the Division that includes the weight or volume (in tons or cubic yards) of the feedstocks accepted, total compost produced, and any amount sold or used in the previous fiscal year (July 1 - June 30).
 - (xii) Records documenting compliance of the composting facility with these Rules shall be kept for a minimum of three years in a form suitable for submission to or inspection by the Division. Records shall be retained at the composting facility unless an off-site storage location is approved by the Division.
 - (xiii) A facility odor minimization plan shall be maintained and updated as stipulated in the following:
 - (I) The odor impact minimization plan shall be revised and submitted to the Division for any major modification as described in 391-3-4-.16(7).
 - (II) The odor impact minimization plan shall be reviewed annually by the operator to determine if any revisions are necessary.

- (III) The odor impact minimization plan and results of the odor monitoring shall be used by the Division to determine whether the facility is following the procedures approved in its permit and its design and operational plan.
- (xiv) The composting facility shall have a sign at its entrance that lists the name of the facility, permit number, days and hours of operation, feedstocks accepted, and emergency contact information.
- (xv) The composting facility shall be closed in accordance with Rule [391-3-4-.11](#).

(d) Class 4 Composting Facilities

1. Any composting facility that is neither exempt under [391-3-4-.16\(2\)](#), nor meets the conditions for Permit-by-Rule for Composting Facilities in [391-3-4-.16\(4\)\(b\)](#), shall obtain a permit in accordance with following requirements:
2. Class 4 composting facilities may compost Category A, B, and C feedstocks.
3. Class 4 composting facilities shall comply with the design and operating standards for Class 3 composting facilities and the additional design and operating standards listed below:
 - (i) The design standards for Class 4 include:
 - (I) The compost pad for the receiving, mixing, and active composting areas shall prohibit ponding and limit infiltration of contact water by being uniformly graded at a minimum slope of 2%. The compost pad shall contain a layer to limit infiltration. This layer shall either be one foot in thickness with a hydraulic conductivity not exceeding 1×10^{-5} cm/sec or an approved alternative which meets or exceed this specification for the purpose of limiting infiltration. The layer to limit infiltration shall be constructed on a prepared and compacted subsurface, and overlain by a wearing surface that will resist deformation, prevent ponding, and prevent the infiltration of contact water. A minimum separation of five feet is required between the bottom of the infiltration layer and the seasonal high water table. Industrial waste proposed for the use in the construction of the compost pad shall be approved by the Division.
 - (II) Contact water shall be contained in a tank with secondary containment or in an impoundment with a liner system consisting of a one-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. The liner shall be overlain by a protective marker layer of sand or stone no less than one foot in thickness. An alternate liner system with the equivalent ability to limit infiltration may be approved by the Division.

- (ii) The operating standards for Class 4 include:
 - (I) The composting pad shall be maintained and repaired as needed. Cracks or other defects identified in the wearing surface shall be promptly repaired under the supervision of the facility manager. Any repairs or reconstruction of the layer limiting infiltration shall be completed under the supervision of a professional engineer, who shall prepare a report and certification of the repairs. A copy of the report(s) shall be maintained in the facility's operating records. Compost materials shall not be placed in areas with damage to the infiltration layer, and berms or other diversions shall be installed to prevent run-on of contact water into these areas.
 - (II) Facilities that compost biosolids or sewage sludge shall comply with all applicable federal regulations regarding sludge management at [40 CFR 501](#); [40 CFR 503](#); and [40 CFR 503, Subpart B](#).
 - (III) Groundwater monitoring systems shall be designed and installed in accordance with [391-3-4-.14](#). Additionally:
 - (A) Monitoring parameters shall be established based on the hydrogeologic data related to the site, the type of feedstocks accepted at the facility, and waste characterization analyses performed on incoming feedstocks.
 - (B) Monitoring shall be conducted semi-annually, at a minimum.
 - (IV) By the end of each operating day, all incoming Category B and C feedstocks shall be processed into the active composting pile, transferred to leak-proof containment, or mixed with bulking material and covered in a manner that minimizes nuisance odors and scavenging by vectors.

(e) Class 5 Composting Facilities

1. Class 5 composting facilities may compost Category A, B, C, and D feedstocks.
2. Class 5 composting facilities shall comply with the design and operating standards for Class 3 and 4 composting facilities and the additional design and operating standards listed below:
 - (i) The design standards for Class 5 include: Reserved.
 - (ii) The operating standards for Class 5 include:
 - (I) The feedstock receiving and mixing areas shall be in an enclosed structure. The receiving area of the composting operation shall be

constructed of asphalt, concrete, or a composite liner system. Receiving entrances shall be closed and under negative pressure during receipt and processing of Category D feedstocks.

- (II) By the end of each operating day, all incoming Category B, C, and D feedstocks shall be processed into the active composting pile, transferred to leak-proof containment, or mixed with bulking material to minimize nuisance odors and scavenging by vectors.

(f) Class 6 In-vessel Composting and Anaerobic Digestion Facilities

1. Class 6 facilities employ in-vessel composting or anaerobic digestion. These facilities may process Category A, B, C, and D feedstocks.
2. The design standards for Class 6 facilities include:
 - (i) A description of the basic site design.
 - (ii) A description of the type of technology to be used, including a copy of the drawings and specifications of the composting or digestion equipment and a process flow diagram that includes the types of the major material handling equipment and material flow.
 - (iii) A description of the unit's requirements for power, water, and wastewater removal.
 - (iv) A description of the type and quantities of feedstock to be processed.
 - (v) A description of the storage capacity for feedstocks, products and digestate, if applicable.
 - (vi) Anticipated annual operational capacity in cubic yards or gallons per day.
 - (vii) A description of the proposed methods used to control spills, run-off, litter, odors, dust, rodents, and insects, including the storage of feedstocks, compost and digestate, leak-prevention and spill release measures, and the methods to monitor effectiveness for control measures.
 - (viii) The facility shall have a site-specific odor minimization plan that includes, at a minimum, the following:
 - (I) A complaint response protocol.
 - (II) A description of operating procedures for minimizing odor.
 - (III) A description of the processes and technologies used to control odors.

- (ix) A contingency plan detailing corrective or remedial actions to be taken in the event of equipment breakdown; odors; unacceptable waste delivered to the facility; spills; and other undesirable conditions such as fire, dust, noise, vectors, unusual traffic conditions, and litter. The plan shall also include the proposed emergency provisions for equipment breakdown or power failure.

3. The operating standards for Class 6 facilities include:

- (i) Operation and management shall be under the supervision and control of an individual properly trained in the operation of such facilities at all times. Facility operations managers must be able to document training in the basics of composting and/or anaerobic digestion operations through a course approved by the Division.
- (ii) The facility shall have a sign at its entrance that lists the name of the facility, permit number, days and hours of operation, feedstocks accepted, and emergency contact information.
- (iii) The facility shall install and maintain storm water management controls.
- (iv) Suitable measures to control vectors shall be applied.
- (v) Suitable measures to prevent, control, and extinguish fires shall be applied.
- (vi) The operator shall take measures to prevent spillage and promptly respond to any leaks or spills that occur.
- (vii) By the end of each operating day, all incoming Category B, C, and D feedstocks shall be processed, transferred to leak-proof containment, or mixed with bulking material and covered in a manner that minimizes odors and scavenging by vectors. For facilities with an anaerobic digester, the feedstocks can be stored in leak-proof containers with lids that prevent vector or odor problems for a period of time to allow for proper organic loading of the digester. This time period shall not exceed four days.
- (viii) Digestate not contained in an in-vessel digester, sealed container, or sealed structure, shall, within 24 hours, be removed from the site and either disposed or processed at a permitted solid waste facility or incorporated into a permitted, on-site compost operation. Digestate may be stored in a sealed container or sealed structure for up to nine months. By-products from the separation of digestate shall be stored separately and in sealed containers.
- (ix) Non-compostable waste shall be stored in a waste container and then recycled or disposed of at a permitted solid waste facility.
- (x) For in-vessel composting operations, the operator shall ensure that the composting process reduces pathogens. The compost material shall be

maintained at a minimum average temperature of 55°C or higher for three consecutive days, followed by at least 14 days at over 40°C with an average temperature of over 45°C.

- (xi) Facilities employing anaerobic digestion must minimize the uncontrolled release of biogas.
- (xii) Notice of final closure shall be provided to the Director within 60 days from final receipt of feedstock. Any site not receiving feedstock in excess of 180 days, unless properly closed or otherwise approved by the Division, shall be deemed closed and in violation of these Rules. Notice of closure shall include documentation that all feedstocks, compost materials and digestate have been removed from the facility and that the site has been stabilized in accordance with the Manual for Erosion and Sediment Control in Georgia.

(6) Criteria for Siting Composting Facilities.

(a) Class 2 composting facilities shall comply with the following criteria:

1. The facility shall not be located in the 100-year floodplain.
2. A 50-foot undisturbed buffer shall be maintained between the composting operation and the property line.
3. A 200-foot buffer shall be maintained between the composting operation and any adjacent residences and/or drinking water supply wells.
4. A 50-foot buffer shall be maintained between the composting operation and all streams.
5. A description of surrounding land uses up to a ½-mile radius shall be provided.
6. Airport safety restrictions, as required by Rule [391-3-4-.05\(1\)\(c\)](#) for MSWLF units, shall be met.

(b) Classes 3-6 composting facilities and anaerobic digestion facilities shall comply with the following criteria:

1. The facility shall submit a letter from the local government authority stating that the proposed facility complies with local zoning and land use ordinances.
2. The facility shall submit written verification by the applicant that the facility is consistent with the local or regional solid waste management plan, as required in Rule [391-3-4-.02\(4\)\(c\)5](#).
3. The facility shall not be located in the 100-year floodplain.
4. The facility shall submit a map of the topographic setting depicting features, including

all upstream and downstream drainage areas affecting or affected by the proposed site, floodplain, gullies, karst conditions, wetlands, unstable soils, and percent slope.

5. A 100-foot undisturbed buffer shall be maintained between the composting operation and the property line.
6. A 500-foot buffer shall be maintained between the composting operation and any adjacent residences and/or any drinking water supply wells.
7. A 50-foot buffer shall be maintained between the composting operation and all streams.
8. A description of surrounding land uses up to a ½-mile radius shall be provided.
9. Airport safety restrictions as required by Rule [391-3-4-.05\(1\)\(c\)](#) for MSWLF units, shall be met.
10. The facility shall submit a site assessment report, prepared by a professional geologist or geotechnical engineer registered in Georgia, addressing the above-listed criteria.

(c) In addition to meeting the Class 3 siting requirements, Class 4 and 5 composting facilities shall comply with the following siting criteria:

1. Submission of a hydrogeological assessment, as specified in [391-3-4-.05\(1\)\(j\)](#) may be required.
2. Submission of an odor assessment that includes, at a minimum:
 - (i) The proximity of existing odor receptors;
 - (ii) An evaluation of the site and operation characteristics to determine the potential for impacts on the neighboring community from the off-site migration of odors from the proposed facility; and
 - (iii) A description of the design considerations or practices to be implemented to control the potential impacts of off-site odors generated from the facility.

(7) Permit Modifications for Class 3-6 Facilities.

(a) All modifications of existing facilities shall be classified as follows:

1. Major modifications include those changes which substantially alter the design of the facility, management practices, the types or categories of feedstocks processed, or the technologies employed, and due to the nature of the changes, would likely impact the facility's ability to adequately protect human health and the environment. Major modifications, therefore, require closer review and public input than minor modifications.

2. Major modifications shall include, but are not limited to, the following:
 - (i) A modification which adds a new solid waste handling process. This shall include, but not be limited to, the addition of a materials recovery facility, a composting operation co-located at an anaerobic digestion facility, baling operation, shredding operation, or liquid solidification operation.
 - (ii) A modification which involves a change to a site suitability requirement, which could have originally impacted the siting of the facility.

3. Minor modifications include changes that do not substantially alter the permit conditions, that do not reduce the capacity of the facility to protect human health or the environment, or that do not prevent the facility from responding in a timely manner. These changes include common variations in the type and quantities of feedstocks managed, technological advancements, or changes necessary to comply with new Rules, where these changes can be implemented without substantially changing design specifications or management practices in the permit.
 - (i) Minor modifications shall include, but are not limited to, the following:
 - (I) Changing the name of the facility.
 - (II) A modification which involves the relocation of access roads.
 - (III) A modification which adds scales.
 - (IV) A modification which involves the addition or removal of on-site structures.
 - (V) A modification which involves the addition of or a change to a groundwater or surface water monitoring system.
 - (VI) A modification which involves the addition or removal of a Permit-by-Rule facility.
 - (VII) A modification which involves the removal of any solid waste handling facility.
 - (VIII) A modification which involves the addition of or a change to a closure or post- closure plan.
 - (IX) A modification which involves the addition of or a change to a method of contact water handling and/or treatment.
 - (X) A modification which involves the addition of a corrective action plan.
 - (XI) A modification which involves a change in ownership, or in the case of a corporation of over five percent of the stock in a corporation

holding a permit, but does not involve the transfer of the permit.

4. All major modifications shall be subject to the following requirements:
 - (i) Submission of a completed application for a permit modification.
 - (ii) Submission of supporting documents accompanying the application for a permit modification that describe the exact change(s) to be made to the permit conditions and supporting documents referenced by the permit that explain why the change is needed.
 - (iii) Submission of a revised design for the requested change(s).
 - (iv) Submission of written verification by the applicant, as required by Rule [391-3-4-.05\(1\)\(a\)](#), that the facility, as proposed to be modified, conforms to all local zoning/land use ordinances, if any.
 - (v) Submission of written verification by the applicant that the facility, as proposed to be modified, is consistent with local or regional solid waste management plans. The verification shall consist of letters from the host jurisdiction and generating jurisdictions verifying consistency with the approved local solid waste plan.
 - (vi) Submission of written verification by the applicant that a public hearing was held by the governing authority of the county or municipality in which the facility requesting the modification is located, not less than two weeks prior to granting approval of the modification. Submission of a typed transcript of the hearing. Submission of written verification that notice of such hearing was posted at the site of such facility and advertised in a newspaper of general circulation serving the county or counties in which the facility is located at least 30 days prior to such hearing.

(8) Testing.

- (a) Class 3-6 composting facilities and anaerobic digestion facilities that compost on site shall meet the following test standards and requirements:
 1. Samples and measurements taken for the purpose of product testing shall be representative of the composting activity and shall be conducted in accordance with methods and procedures approved by the Director.
 2. The minimum number of samples that shall be collected and analyzed is shown in the table below. Samples to be analyzed shall be composted prior to the analysis.

Compost Quantity ¹ (tons/yr)	Frequency
1 - 6,200	Once per quarter

6,201 - 17,500	Once every two months
Greater than 17,500	Once per month

¹Either the amount of finished compost applied to the land, prepared for sale or given away on an "as is" (wet weight) basis.

If test results show the finished product is stable and in compliance with both metals and pathogens standards for a two-year period, the facility may request a reduction in the frequency of testing, provided there are no changes in feedstocks composted at the facility. Class 3 facilities may test for pathogens and trace metals at half the frequency, but overall testing for all other characteristics must be as defined in the table above.

3. All compost shall be tested for stability in accordance with methods and procedures approved by the Director.
 - (i) The stability results shall be documented in the facility's operating records.
4. All compost shall be tested for the presence of pathogens in accordance with methods and procedures approved by the Director.
 - (i) Either the density of fecal coliform in the finished compost shall be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the finished compost shall be less than three MPN per four grams of total solids (dry weight basis) before the compost may be sold, given away, or applied to the land.

5. All compost shall be analyzed for metals in accordance with methods and procedures approved by the Director.
 - (i) The following pollutant concentrations shall not be exceeded:

Pollutant	Monthly average concentration (milligrams per kilogram) ¹
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2,800

¹ On a dry weight basis.

- (b) For Class 6 facilities that operate an anaerobic digester, the facility shall, at a minimum, monitor or test the following:
1. Chemical Oxygen Demand shall be tested daily if the feedstocks change on a daily basis or weekly if the feedstocks are consistent or if the digester is at steady state, with steady state being defined as the treatment level or the gas production is constant for at least three Hydraulic Retention Times (HRT).
 2. Alkalinity shall be measured daily if the feedstocks change on a daily basis or weekly if the feedstocks are consistent or if the digester is at steady state, with steady state being defined as the treatment level or the gas production is constant for at least three Hydraulic Retention Times (HRT).
 3. Gas production shall be monitored.
- (c) Digestate that has not been analyzed for metal concentration, pathogen concentration, and any other contaminants as stipulated by the Division, or is known to contain any metal in amounts that exceed the maximum metal concentrations in 391-3-4-.16(8)(a)(5)(i), shall be designated for disposal or additional processing.
- (d) The Division may approve alternative methods of compliance to meet the requirements of this section including, but not limited to, sampling frequencies.

Cite as Ga. Comp. R. & Regs. R. 391-3-4-.16

Authority: O.C.G.A. § 12-8-20 et seq.

History. Original Rule entitled "Asbestos Containing Waste" was F. Jun. 9, 1989; eff. Jun. 29, 1989.

Repealed: New Rule entitled "Composting" adopted. F. Sept. 4, 1991; eff. Sept. 24, 1991.

Amended: F. Jun. 7, 1993; eff. Jun. 27, 1993.

Amended: Title changed to "Composting, Mulching and Anaerobic Digestion Facilities." F. Jun. 25, 2014; eff. Jul. 15, 2014.

Amended: F. Mar. 8, 2018; eff. Mar. 28, 2018.