

WAC 173-350-250 Anaerobic digesters. (1) Anaerobic digesters - Applicability.

(a) These standards apply to all facilities that treat solid waste by anaerobic digestion.

(b) These standards do not apply to:

(i) Storage or treatment of solid or liquid wastes in surface impoundments or tanks regulated under WAC 173-350-330;

(ii) Anaerobic digesters regulated in accordance with chapter 90.48 RCW, Water pollution control; and

(iii) Anaerobic digesters regulated in accordance with chapter 173-308 WAC, Biosolids management.

(2) **Anaerobic digesters - Permit exemptions.** In accordance with RCW 70.95.305, anaerobic digester facilities processing the types and volumes of materials identified in Table 250-A are subject solely to the requirements of Table 250-A and (b) of this subsection and are exempt from solid waste handling permitting. Feedstocks not listed in Table 250-A must be approved by the department. Violations of the terms and conditions of Table 250-A and (b) of this subsection may be subject to enforcement provisions of RCW 70.95.315.

(a) An owner or operator that does not comply with the terms and conditions of Table 250-A and (b) of this subsection must obtain a solid waste handling permit from the jurisdictional health department and comply with all applicable requirements of this chapter.

**Table 250-A
Terms and Conditions for Exemptions**

	Organic Materials	Volume	Specific Requirements for Activity or Operation
(1)	All organic feedstocks	No more than 5,000 gallons or 25 cubic yards of material on-site at any one time.	No notification, reporting or testing requirements.
(2)	All organic feedstocks	Greater than 5,000 but no more than 50,000 gallons of liquid or semi-solid material on-site at any one time; or Greater than 25 but no more than 250 cubic yards of nonliquid material on-site at any one time.	For facilities managing more than 5,000 gallons or 25 cubic yards on-site at any one time, and if organic materials are received from or distributed off-site, the owner or operator must: (a) Thirty days prior to operation, facilities must submit a notification of intent to operate as a conditionally exempt facility to the jurisdictional health department and the department. Notice of intent must be submitted on a form provided by the department. (b) Facilities that distribute digestate (solids, semi-solids or liquids) off-site must meet the following conditions: (i) Sample and test digestate solids every 5,000 cubic yards or once per year, whichever is more frequent, to demonstrate it meets compost quality standards of WAC 173-350-220(4) (Table 220-B) before it is distributed for off-site use; or (ii) Ensure digestate liquids or nonseparated digestate meets the conditions for a commercial fertilizer as applicable in chapter 15.54 RCW, Fertilizers, minerals, and limes; or (iii) Send digestate to a compliant permitted or conditionally exempt compost facility for further treatment to meet compost quality standards; or (iv) Land apply digestate in accordance with WAC 173-350-230, Land application; or (v) Use digestate in accordance with WAC 173-350-200, Beneficial use permit exemptions; or

	Organic Materials	Volume	Specific Requirements for Activity or Operation
			<p>(vi) Process or manage digestate in an alternate manner approved by the department or the jurisdictional health department;</p> <p>(vii) Submit annual reports and results of digestate analysis (if applicable) to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department.</p>
(3)	<p>Livestock manure; may include livestock manure that is imported, which means originating off of the farm or site where the anaerobic digester is being operated; and</p> <p>Organic feedstocks except materials collected from municipal, commercial or residential solid waste collection programs. All imported organic materials must be preconsumer.</p> <p>If imported organic feedstocks are likely to contain animal by-products, they must be previously source separated at a facility licensed to process food by the United States Department of Agriculture, the United States Food and Drug Administration, the Washington state department of agriculture, or other applicable regulatory agency.</p> <p>If imported organic feedstocks contain bovine processing waste, they must be derived from animals approved by the United States Department of Agriculture Food Safety and Inspection Service and not contain any specified risk material.</p>	<p>No limits when livestock manure is at least 50 percent of total feedstocks volume, and imported, nonmanure organic feedstocks are not greater than 30 percent of total feedstock volume.</p>	<p>(a) Thirty days prior to operation, facilities managing imported organic feedstocks must submit a notification of intent to operate as a conditionally exempt facility to the jurisdictional health department and the department. Notice of intent must be submitted on a form provided by the department.</p> <p>(b) All organic materials must be received and stored in a structure(s) that:</p> <p>(i) Complies with the Natural Resources Conservation Service's Practice Standard Code 313 in effect as of July 26, 2009, or other approved storage construction standard approved by the department or the jurisdictional health department;</p> <p>(ii) Is certified by a representative of the Natural Resources Conservation Service to be effective at protecting surface and groundwater; or</p> <p>(iii) Meets applicable construction industry standards adopted by the American Concrete Institute or the American Institute of Steel Construction in effect as of July 26, 2009; and</p> <p>(iv) Prevents migration of nuisance odors beyond property boundaries and minimizes attraction of flies, rodents, and other vectors.</p> <p>(c) The anaerobic digester must be designed and operated in accordance with standards in the Natural Resources Conservation Service's Conservation Practice Standard, Code 366, in effect as of July 26, 2009.</p> <p>(d) All imported organic feedstocks must be fed into the anaerobic digester within 36 hours.</p> <p>(e) Digestate must be managed in accordance with a dairy nutrient management plan under chapter 90.64 RCW, Dairy nutrient management, that includes elements addressing management and use of digestate.</p> <p>Digestate that is managed in accordance with the dairy nutrient management plan under chapter 90.64 RCW, Dairy nutrient management, is no longer a solid waste when those plans include elements addressing management and use of digestate.</p> <p>(f) Facilities that distribute digestate (solids, semi-solids or liquids) off-site other than under a nutrient management plan must meet the following conditions:</p> <p>(i) Digestate must meet compost quality standards of WAC 173-350-220 for pathogens, stability, nutrient testing, metals and other testing before it is distributed for off-site use; or</p> <p>(ii) Be sent to an off-site permitted compost facility for further treatment to meet compost quality standards; or</p>

	Organic Materials	Volume	Specific Requirements for Activity or Operation
	Imported organic feedstocks cannot contain sheep carcasses or sheep processing waste.		(iii) Be processed or managed in an alternate manner approved by the department; and facilities must: Submit annual reports and results of digestate analysis (if applicable) to the department and the jurisdictional health department by April 1st of each calendar year. Annual reports must be submitted on forms provided by the department.

(b) The owner or operator of an anaerobic digester in compliance with all of the conditions of Table 250-A must also meet all of the following conditions in order to maintain exempt status:

- (i) Comply with the performance standards of WAC 173-350-040;
- (ii) Allow inspections by the department and/or jurisdictional health department at reasonable times to verify compliance with the conditions specified in this subsection;
- (iii) Manage the operation to prevent the attraction of flies, rodents, and other vectors; and
- (iv) Manage the operation to prevent the migration of agricultural pests identified by local horticultural pest and disease control boards, as applicable.

(3) **Anaerobic digesters - Permit requirements - Location.** There are no specific location standards for anaerobic digesters subject to this chapter; however, anaerobic digesters must meet the performance standards of WAC 173-350-040.

Note: When considering anaerobic digestion facility location, please review the U.S. Department of Transportation Federal Aviation Advisory Circular No. 150/5200-33B, 2007.

(4) **Anaerobic digesters - Permit requirements - Design.** Anaerobic digesters must be designed so that the facility can be operated to meet the performance standards of WAC 173-350-040. The owner or operator of an anaerobic digester facility must:

(a) Prepare and provide to the jurisdictional health department engineering reports, plans, specifications, and a construction quality assurance plan that address the standards of this subsection. The reports, plans, and specifications must be prepared by a professional engineer registered in the state of Washington and must include:

(i) An engineering report that presents the design basis and calculations for the engineered features of the facility including, but not limited to, pads, impoundments, leachate management features (if applicable), digestate management features, stormwater management features, and anaerobic digester features. The engineering report must demonstrate that the proposed design will meet the performance standards of this chapter;

(ii) Scale drawings of the facility including the location and size of feedstock storage areas, fixed equipment, buildings, leachate management features (if applicable), digestate management features, stormwater management features, access road and other constructed areas, and buildings integral to facility operation;

(iii) Design specifications for the engineered features of the facility including, but not limited to, pads, stormwater management features, leachate management features (if applicable), digestate management features, and an anaerobic digester design that demonstrates all structures, containers, tanks, and/or surface impoundments will meet the requirements of this section, and of any federal, state, or local water and air quality permits; and

(iv) A construction quality assurance plan that describes monitoring, testing and documentation procedures that must be performed

during construction of the facility to ensure the facility is constructed in accordance with the approved design.

(b) Provide all-weather roads from the public highway to and within the facility when operations require public access. Roads must be designed and maintained to prevent traffic congestion, traffic hazards, dust and noise pollution;

(c) Design waste receiving areas, digesters, digestate management features, stormwater, and leachate management features (if applicable), to prevent contamination of air, soil, surface water, and groundwater;

(i) Feedstock, leachate (if applicable), and digestate receiving and storage areas must either be in tanks or surface impoundments meeting the requirements of this section, or be on pads to prevent contamination of air, soil, surface water, and groundwater underlying or adjacent to receiving and storage areas;

(ii) Pads must meet the following requirements:

(A) All pads must be curbed or graded in a manner to prevent ponding, control run-on and runoff, and separately collect and convey all stormwater and leachate to separate storage or holding systems. Stormwater that is combined with leachate must be treated as leachate in accordance with this section;

(B) All pads must be constructed on subgrades that provide sufficient bearing capacity to support the weight of the pad, the materials placed on them, and the equipment used in handling the materials;

(C) The entire surface area of the pad must be designed to maintain its structural and hydraulic integrity against loads resulting from feedstock and digestate storage, machinery used for feedstock handling, and against surface wear or damage caused by feedstock and digestate handling and storage;

(D) The pad may be constructed of materials such as concrete (with sealed joints) or asphaltic concrete that prevents subsurface soil and groundwater contamination; and

(E) The jurisdictional health department may allow pads to be designed and constructed with materials other than those listed in (c)(ii)(D) of this subsection, if the applicant demonstrates in the engineering report to the jurisdictional health department's satisfaction that the alternative pad provides sufficient protection to meet the performance standards of this section and of WAC 173-350-040.

(iii) The anaerobic digester design must comply with one of the following three conditions:

(A) Design criteria in the Natural Resources Conservation Service's Washington Conservation Practice Standard, Anaerobic Digester Code 366 in effect October 2010, or other effective date as specified by the department; or

(B) Surface impoundment and tank design standards, WAC 173-350-330(4); or

(C) Other engineered design that the owner or operator can demonstrate meets the performance standards of WAC 173-350-040 to the jurisdictional health department's and the department's satisfaction. Written consent from the jurisdictional health department and the department constitutes approval.

(iv) Stormwater management features must divert stormwater from feedstock receiving and storage areas, and from digestate collection and storage areas. Features may include, but are not limited to, run-on prevention systems, berms, diversion swales, ditches, and other features;

(v) Leachate management features may include, but are not limited to, runoff prevention systems, leachate collection, conveyance, storage structures, and treatment systems;

(vi) Leachate (if applicable) must be contained or collected. Any discharges to ground that result in contaminants migrating to groundwater require a waste discharge permit under chapter 90.48 RCW, Water pollution control, prior to discharge. Discharges to ground that result in degradation of groundwater quality are prohibited under chapter 90.48 RCW, Water pollution control. Any discharge to sanitary sewer requires additional permitting by the local delegated authority or department;

(vii) Leachate ponds or tanks, or digestate liquid storage in ponds or tanks must meet one of the following conditions:

(A) Ponds must meet Natural Resources Conservation Service Standard for a waste storage facility in the 2001 *Washington Field Office Technical Guide 313* (revised June 2011); or

(B) Ponds must have a liner consisting of a minimum 30-mil thickness geomembrane on a subgrade that provides sufficient bearing capacity to support the liner and the contents of the pond. A liner constructed with a high density polyethylene geomembrane must be at least 60-mil thick to allow for proper welding; and

(I) Have dikes and slopes designed to maintain their structural integrity under conditions of a leaking liner and capable of withstanding erosion from wave action, overfilling, or precipitation; and

(II) Have freeboard (distance between the liquid level and the top of the pond) equal to or greater than eighteen inches to avoid overtopping from wave action, overfilling, or precipitation. The jurisdictional health department may reduce the freeboard requirement if other engineering controls are in place that prevent overtopping. These engineering controls must be specified during the permitting process; or

(C) The jurisdictional health department may approve the use of an alternative liner design if the owner or operator can demonstrate during the permitting process that the proposed design will prevent migration of solid waste constituents or leachate into the ground or surface waters at least as effectively as the liners described in this subsection; or

(D) Tanks used to store leachate or digestate liquid must meet design standards in WAC 173-350-330 (4)(b).

(viii) Leachate ponds and digestate liquid storage that have the potential to impound more than 10-acre feet (three million two hundred fifty-nine thousand gallons) of liquid measured from the top of the dike and that would be released by a failure of the containment dike must be reviewed and approved by the department's dam safety section.

(5) **Anaerobic digesters - Permit requirements - Documentation.** Facilities must not start operation until the jurisdictional health 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 and issued a permit. Within thirty days of completing construction, the owner or operator of an anaerobic digestion facility must provide the following materials to the jurisdictional health department and the department:

(a) Copies of the construction record drawing for engineered features at the facility; and

(b) A report documenting facility construction, including the results of observations and testing carried out as part of the construction quality assurance plan.

(6) **Anaerobic digesters - Permit requirements - Operating.** The owner or operator of an anaerobic digester must operate in compliance with the performance standards of WAC 173-350-040 or Natural Resource Conservation Service Practice Standard Code 366 as applicable, and:

(a) Operate the facility to:

(i) Control air contaminants, such as dust and nuisance odors, to prevent these and other contaminants from migrating beyond property boundaries;

(ii) Prevent the attraction of vectors;

(iii) Prevent the migration of agricultural pests identified by the local horticultural pest and disease control boards as applicable;

(iv) Confine organic materials prior to and after processing to specifically designated areas, meeting the applicable standards of this section;

(v) Ensure that dangerous waste is not accepted, treated, or stored;

(vi) Ensure the facility operates under the supervision and control of a properly trained individual during hours of operation when facility staffing is required;

(vii) Ensure facility employees are trained in appropriate facility operations, maintenance procedures, and safety and emergency procedures according to individual job duties and according to an approved plan of operation; and

(viii) Restrict access to the facility when the facility is closed.

(b) Inspect the facility to prevent malfunctions and deterioration, operator errors, and discharges that may lead to the release of wastes to the environment or cause a threat to human health. The owner or operator must conduct these inspections as needed, but at least weekly, unless an alternate schedule is approved by the jurisdictional health department as part of the permitting process.

(c) Maintain operating records of the following:

(i) Process monitoring data as described in the plan of operation;

(ii) The quantity in gallons or cubic yards, and types of feedstocks received;

(iii) Results of analysis for digestate that is sold or distributed, according to subsection (5)(e) of this section; and

(iv) Facility inspection reports. Significant deviations from the plan of operation must be noted in the operating record. Records must be kept for a minimum of five years and must be available upon request by the jurisdictional health department.

(d) Prepare and submit an annual report to the jurisdictional health department and the department by April 1st of each calendar year for activities during the previous calendar year. Annual reports must be submitted on forms provided by the department and must include:

(i) Annual quantity and type of feedstocks received;

(ii) Annual quantity of digestate distributed if applicable;

(iii) Annual summary of digestate analysis as applicable, if digestate is distributed off-site; and

(iv) Any additional information required by the department or the jurisdictional health department.

(e) If distributing digestate (solids, semi-solids, or liquids) off-site, produce and manage the product so that it does not harm human health or the environment; and:

(i) Test representative samples of digestate solids every 5,000 cubic yards to demonstrate it meets compost quality standards in WAC 173-350-220(6) (Table 220-B). An alternate testing frequency may be required or approved by the jurisdictional health department; or

(ii) Ensure digestate meets the conditions for a commercial fertilizer as applicable in chapter 15.54 RCW, Fertilizers, minerals, and limes; or

(iii) Send digestate to a permitted compost facility for further processing; or

(iv) Land apply digestate in accordance with WAC 173-350-230, Land application; or

(v) Use digestate in accordance with WAC 173-350-200, Beneficial use permit exemption; or

(vi) Apply digestate on agricultural lands at agronomic rates in accordance with a dairy nutrient management plan or a nutrient management plan; or

(vii) Manage digestate in an alternate manner as approved by the jurisdictional health department and the department.

(f) Develop, keep, and follow a plan of operation approved as part of the permitting process. The plan must describe the facility's operation and must convey to site operating personnel the concept of operation intended by the facility designer. The plan of operation must be kept on-site and available for inspection at the request of the jurisdictional health department. When necessary, the plan must be modified with the approval, or at the direction of the jurisdictional health department. Each plan of operation must include the following:

(i) A description of the types of feedstocks to be handled at the facility. Feedstocks must be approved by the department or jurisdictional health department;

(ii) Procedures for ensuring that only feedstocks described will be accepted;

(iii) Procedures for handling unacceptable wastes;

(iv) A plan for processing digestate to meet the requirements of (e) of this subsection, if distributing digestate off-site;

(v) A nutrient management plan for agricultural lands and farm lands (as described in RCW 84.34.020) if using digestate on-site;

(vi) A description of how facility staff will be appropriately trained;

(vii) A calculation of monthly processing capacity based on maximum volume (cubic yards or gallons) of all materials on-site at any one time. All materials on-site include feedstocks, digesting materials and digestate;

(viii) A material flow plan describing general procedures to manage all materials on-site. All materials on-site include incoming feedstock, digesting materials, and digestate;

(ix) An odor management plan including, but not limited to, the following components:

(A) Methods for treating emissions to reduce odors, if any;

(B) A community relations plan to address odor issues should they arise; and

(C) A description of facility and operational improvements that could be made, if nuisance odors are identified beyond the facility's property boundary, as determined by the jurisdictional health department, the department, or the permitting air authority. The description

of operational improvements must address feedstock receiving, processing, and digestate storage areas of the facility.

(x) A description of how equipment, structures, and other systems will be inspected and maintained, including frequency of inspection and inspection logs. This description must include, but is not limited to:

(A) The groundwater monitoring system, if required;

(B) The overflowing prevention equipment, including details of filling and emptying techniques; and

(C) The liners of surface impoundments and tanks, tank piping, and secondary containment, as applicable.

(xi) Safety, fire, and emergency plans including a spill prevention/response plan;

(xii) The forms used to record volumes (in cubic yards or gallons) of accepted feedstocks; and

(xiii) Other details to demonstrate that the facility is operated in accordance with this chapter and as required by the jurisdictional health department.

(7) **Anaerobic digesters - Permit requirements - Groundwater monitoring.** There are no specific groundwater monitoring requirements for anaerobic digestion facilities subject to this chapter; however, anaerobic digestion facilities must meet the performance standards of WAC 173-350-040.

(8) **Anaerobic digesters - Permit requirements - Closure.** The owner or operator of an anaerobic digester facility must:

(a) Develop, keep, and follow a closure plan approved by the jurisdictional health department as part of the permitting process. At a minimum, the closure plan must include removing all organic materials, including digestate, from the facility. For planning purposes, assume the facility is at full permitted site capacity when it is closed; and

(b) Notify the jurisdictional health department sixty days in advance of closure. At closure, the facility is financially responsible for the removal of all organic materials including, but not limited to, raw or partially digested feedstocks, and digestate from the facility. The materials must be sent to another facility that complies with the applicable regulations for handling the waste.

(9) **Anaerobic digesters - Permit requirements - Financial assurance.** There are no specific financial assurance requirements for anaerobic digestion facilities subject to this chapter; however, anaerobic digestion facilities must meet the performance standards of WAC 173-350-040.

(10) **Anaerobic digesters - Permit requirements - Permit application contents.** The owner or operator of an anaerobic digestion facility not exempt under subsection (2) of this section must obtain a solid waste permit from the jurisdictional health department. All applications for permits must be in accordance with the procedures established in WAC 173-350-710. In addition to the requirements of WAC 173-350-710 and 173-350-715, each permit application must contain:

(a) Engineering reports, plans, and specifications that address the design standards of subsections (4) and (5) of this section;

(b) A plan of operation that addresses the requirements of subsection (6) of this section; and

(c) A closure plan meeting the requirements of subsection (8) of this section.

[Statutory Authority: Chapter 70.95 RCW, and RCW 70.95.060, 70.95.215, 70.95.218, 70.95.260(6), 70.95.300, 70.95.305, 70.95.310, 70.95.440.

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