



State of Oregon
Department of
Environmental
Quality

DRAFT 5/23/2012

Proposed Conversion Technology Rule Amendments Division 96 (part): Anaerobic Digestion and Composting

340-096-0001 (*amend*)

Applicability

OAR chapter 340, division 96 applies to energy recovery facilities and incinerators receiving solid waste delivered by the public or by a solid waste collection service, composting facilities, **conversion technology facilities**, sludge disposal sites, land application disposal sites, transfer stations, material recovery facilities and solid waste treatment facilities. Such facilities are disposal sites as defined by ORS Chapter 459, and are also subject to the requirements of OAR chapter 340, division 93, financial assurance requirements as set forth in division 95 at OAR 340-095-0090 and 340-095-0095, and division 97. The department may tailor the financial assurance requirements to the nature of the facility and may exempt low risk facilities. For purposes of these division 96 rules, a low risk facility is one the department determines is not likely to generate significant amounts of residual waste materials or contamination from the operation of the facility that will remain at closure.

340-096-0060 (*amend*)

Special Rules Pertaining to Composting: Applicability

(1) No person may construct or operate a composting facility except as provided in this rule.

(2) All composting facilities must comply with 340-096-0070: Performance Standards.

(3) All composting facilities, except those composting facilities exempt under (3)(a) of this rule, must comply with OAR 340-096-0080: Screening.

(a) The following composting facilities are exempt from the requirements of OAR 340-096-0080: Screening, **340-96-0090: Operations Plan Approval**, 340-096-100: Registration, and 340-096-0110: Composting Permit unless the department determines the composting facility may adversely affect human health or the environment:

(A) Any composting facility composting less than 100 tons of Type 1 feedstock, Type 2 feedstock, or both during any calendar year;

(B) Any composting facility composting less than 20 tons of Type 3 feedstock during any calendar year;

(C) Any composting facility composting less than 40 tons of Type 3 feedstock in any calendar year when conducting in-vessel composting in containers designed to prohibit vector attraction and prevent nuisance and odor generation;

(D) Any composting facility that produces silage on a farm for animal feed; and

(E) Any home composting facility.

(F) Any Confined Animal Feeding Operation operating under a Confined Animal Feeding Operation permit issued by the Oregon Department of Agriculture and operating a composting facility, in conjunction with the Confined Animal Feeding Operation, in compliance with a composting facility management plan approved by the Oregon Department of Agriculture that meets the requirements of OAR 340-096-0090 and for which the Oregon Department of Agriculture is providing oversight under an agreement with the department. The Oregon Department of Agriculture may require that a facility subject to this section (3)(a)(F) comply with OAR 340-096-0080: Screening.

(4) All composting facilities that are determined by the department to present a risk to human health or the environment under OAR 340-096-0080(3)(b): Screening, or under (3)(a) of this rule, must comply with OAR 340-096-0090: Operations Plan Approval and OAR 340-096-0110: Composting Permit.

(5) ~~All composting facilities that are not exempt under this rule, including but not limited to all facilities operating under a solid waste composting facility individual permit, general permit, or registration issued by the department prior to the effective date of this rule, must submit the materials required by OAR 340-096-0080: Screening within 180 days after the effective date of this rule.~~ Any composting facility in operation before the effective date of these rules **September 14, 2009** may continue in operation pending a determination by the department under OAR 340-096-0080: Screening and issuance by the department of a Registration under OAR 340-096-0100: Registration or a Composting Permit under OAR 340-096-0110: Composting Permit. **Any anaerobic digestion facility in operation under a solid waste treatment facility permit on January 1, 2013**

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may either continue to operate under the solid waste treatment facility permit, or may apply for a composting facility screening under OAR 340-096-0080(3)(b): Screening.

(6) Any person proposing to begin operation of a new composting facility or to substantially modify an existing facility, where such a facility is not exempt under section (3) of this rule, must comply with OAR 340-096-0080: Screening and provide to the department the information required by under OAR 340-096-0080(1) at least 180 days before the facility is proposed to begin operation.

Stat. Auth.: ORS 459.045, 459A.025 & 468.020
Stats. Implemented: ORS 459.005, 459.015 & 459.205
Hist.: DEQ 6-2009, f. & cert. ef. 9-14-09

340-096-0070 (amend)

Special Rules Pertaining to Composting: Performance Standards

(1) All composting facilities must be designed, constructed, and operated in a manner that does not cause a discharge of leachate, liquid digestate, or stormwater from the facility to surface water, except when such discharge is:

~~(a) Leachate from a composting facility may be discharged to surface water only in compliance with a discharge permit issued by the department.~~

~~(b) Stormwater from a composting facility may be discharged to surface water only in compliance with a discharge permit issued by the department.~~

(2) All composting facilities that collect and dispose of leachate, liquid digestate or stormwater in engineered structures must comply with the applicable requirements of OAR 340-096-0130: Leachate Collection Design and Operating Requirements.

(3) All composting facilities must be designed, constructed, and operated in a manner that does not cause a likely adverse impact to groundwater under OAR 340 Division 40. All composting facilities proposing to use infiltration in soil as a method for managing leachate, liquid digestate or stormwater must comply with OAR 340-096-0120: Groundwater Protection.

(4) All composting facilities must be designed, constructed, and operated in a manner that, to the greatest extent practicable, consistent with proper facility design and operation, controls and minimizes odors that are likely to cause adverse impacts outside the boundaries of the facility.

(5) All composting facilities must be designed, constructed, and operated in a manner that achieves human pathogen reduction as required by under OAR 340-096-0140: Pathogen Reduction.

(6) All composting facilities must be designed, constructed, and operated in a manner that controls or prevents propagation, harborage, or attraction of vectors, including but not limited to rats, birds, and flies.

(7) **All composting facilities that produce, collect and store biogas must be designed, constructed, and operated in a manner consistent with state and local fire regulations that prevents fire and explosions.**

~~(7)~~(8) All composting facilities must comply with all other applicable laws and regulations.

Stat. Auth.: ORS 459.045, 459A.025 & 468.020
Stats. Implemented: ORS 459.005, 459.015 & 459.205
Hist.: DEQ 6-2009, f. & cert. ef. 9-14-09

340-096-0080 (amend)

Special Rules Pertaining to Composting: Screening

(1) All composting facilities not exempted by OAR 340-96-0060(3)(a) will be screened by the department under this rule to determine whether the facility poses a risk to human health or the environment. All facilities subject to this rule must provide to the department the information described below. The department may require any additional information the department considers necessary to evaluate the potential environmental risks posed by a facility.

All information must be submitted on application forms provided by the department and include the screening fee required by under OAR 340-097-0120(3). The application must be accompanied by all required exhibits using paper with recycled content with copy printed on both sides of the paper whenever possible, follow the organizational format and include the level of informational detail required by the department, and be signed by the property owner or person in control of the premises.

(a) Physical information, including:

(A) The location and site schematic, including areas for management of leachate and stormwater, of the existing or proposed composting facility by latitude and longitude, identified on a map;

(B) The location of the facility on a tax lot map;

(C) The location of and distance to surface water in the drainage area of the composting facility, and all drainage channels, ditches and any other water conveyances leading from the composting facility to surface water, identified on a map;

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(D) Distance to the uppermost groundwater aquifer and other known aquifers at the location of the composting facility and in any areas proposed for infiltration of leachate or stormwater from the composting facility;

(E) Soil type or types, and permeability if known or available, at the location of the composting facility and in any areas proposed for infiltration of leachate or stormwater;

(F) The location and well logs of all wells on the property where the composting facility is located; the location and well logs of any wells within 1/4 mile of the composting facility; and, if known, the location of any proposed wells within 1/4 mile of the composting facility;

(G) The locations of all commercial and residential structures within a one mile radius of the composting facility, identified on a map or photograph;

(H) The prevailing wind direction, by season, identified on a map, and any other climactic information related to wind and air movement;

(b) Operational information, including:

(A) A description of the composting operation including feedstock types, volumes and sources, **feedstock storage prior to use**, any grinding or other preparation of feedstocks, composting methods, and uses of composted material, **biogas, digestate and other products or materials**;

(B) A description of any leachate, **liquid digestate** and stormwater produced at the facility, including information about the chemical composition of leachate **and liquid digestate**;

(C) A description of all existing or planned structures and features for managing leachate and stormwater, including but not limited to information about any detention or infiltration basins, and any infiltration structures such as filter strips and bioswales;

(D) If the facility is subject to the pathogen reduction requirements of OAR 340-096-0070(5), a description of the methods the facility will use to achieve such pathogen reduction;

(E) A description of the methods the facility will use to achieve vector control;

(F) Any seasonal variances in the operation of the facility;

(G) Contact information including the ~~composting~~ facility operator, ~~composting~~ facility owner, and property owner; and

(H) Operational and compliance history of the facility.

(c) Information regarding other permits, including any other known or anticipated permits from the department or other governmental agencies. If previously applied for, include a copy of such permit application and, if granted, a copy of such permit.

(d) A Land Use Compatibility Statement pursuant to **under** OAR 340 Division 18 and a statement that the facility is compatible with the solid waste management plan for the jurisdiction.

(2) To conduct the evaluation under section (3) of this rule, the department may require a composting facility to conduct groundwater sampling or monitoring and provide analytical results to the department.

(3) Based on information provided by the ~~composting~~ operator, and any other information available to the department, the department will evaluate the current and likely future impact of the ~~composting~~ facility to human health and the environment. The department will evaluate the degree to which a composting facility may present a risk of adverse effects to surface water and groundwater, and the likelihood the facility will create unacceptable odor problems.

(a) All composting facilities the department determines present a low environmental risk must comply with OAR 340-096-0100: Registration. Any requirements the department determines are necessary for a facility to operate in compliance with OAR 340-096-0070: Performance Standards will be incorporated into the registration Approval Conditions under OAR 340-096-0100. Approval Conditions may include any of the matters addressed in OAR 340-096-0090: Operations Plan Approval. The department will consider a composting facility a "low risk" facility if, based on the information provided under (1) and (2) of this rule, the specific location of the facility, the feedstocks used, and the operational and compliance history of the facility, the department determines:

(A) The facility is not likely to cause discharge of leachate, **liquid digestate**, or leachate **or liquid digestate**-contaminated stormwater to surface water;

(B) Infiltration of leachate, **liquid digestate**, or stormwater from the facility will not cause a likely adverse impact to soil, groundwater quality, or indirectly to surface water quality; and

(C) The facility is not likely to cause odor problems beyond the boundaries of the facility.

(b) All composting facilities the department determines present a risk of potential adverse effects to surface water, groundwater, or soil, or may create odor problems beyond the boundaries of the facility, must comply with OAR 340-096-0090: Operations Plan Approval. The department will consider a composting facility to present a "risk of potential adverse effects" if, based on the information provided under (1) and (2) of this rule, including but not limited to the location of the facility; the design, structures, and operational requirements necessary to meet the requirements of

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OR 340-096-0070; the feedstocks used, and the operational and compliance history of the facility, and the type of composting process used, the department determines:

- (A) The composting facility presents a risk of unpermitted releases of leachate or stormwater to surface water;
- (B) The facility presents a risk of causing a likely adverse impact to surface water or groundwater;
- (C) The facility presents a risk of causing an unacceptable adverse impact to soil; or
- (D) The facility presents a risk of causing odor problems beyond the boundaries of the facility.

(E) The facility presents a risk of causing an explosion or fire from ~~composting~~ gas generation or storage.

(4) The department may at any time reevaluate a composting facility under this rule and may assign a facility to a different category under section (3) of this rule.

Stat. Auth.: ORS 459.045, 459A.025 & 468.020

Stats. Implemented: ORS 459.005, 459.015 & 459.205

Hist.: DEQ 6-2009, f. & cert. ef. 9-14-09

340-096-0090 (amend)

Special Rules Relating to Composting: Operations Plan Approval

(1) All composting facilities subject to this rule must prepare a ~~composting~~ facility operations plan for review and approval by the department that describes how the ~~composting~~ facility will be designed and operated to meet the performance standards set out in OR 340-096-0070. The Operations Plan Approval fee required by under OR 340-097-0120(4) and, if applicable, the Engineering review fee required by under OR 340-097-0120(5), must be submitted to the department with the proposed plan.

(2) Except as provided in OR 340-096-0060(5), a composting facility subject to this rule may not begin or continue operation until the department approves the facility Operations Plan. All composting facilities subject to this rule must operate in compliance with the Operations Plan approved by the department. Any significant changes in the Operations Plan must be approved by the department.

(3) If the department determines that an approved Operations Plan is incomplete, inadequate, or otherwise fails to provide the necessary information and assurances that the composting facility will comply with OR 340-096-0070: Performance Measures or with section (6) of this rule, the department may require the composting facility to revise the Operations Plan.

(4) After receiving a proposed Operations Plan, the department will provide the ~~composting~~ facility operator with an opportunity to meet with the department and discuss the composting facility, the proposed Operations Plan, and any department concerns or issues related to the facility and the plan. Upon final department approval of an Operations Plan, the composting facility must comply with OR 340-096-0110: Composting Permit.

(5) All Operations Plans subject to this rule must address the elements set out in sections (5)(a) through ~~(f)~~(i) of this rule.

(a) Feedstocks and products. The Operations Plan must describe the types and volumes of feedstocks the facility will accept, the methods the facility will use to produce compost, and the proposed uses of the compost, biogas, digestate and other products and materials.

(b) Protection of Surface Water. The Operations Plan must describe how the facility will be designed and operated to comply with OR 340-096-0070(1) and (2) by describing the operational procedures and any structures the facility will use to manage any leachate and any stormwater generated at the facility. Any facility that manages leachate or stormwater in an engineered structure must submit detailed plans and specifications for any such structures and comply with OR 340-096-0130: Leachate and Stormwater Collection Design and Management Requirements.

(c) Protection of groundwater. The Operations Plan must describe how the facility will be designed and operated to comply with OR 340-096-0070(3). Any facility that manages leachate or stormwater through infiltration into soil must comply with OR 340-096-0120: Groundwater.

(d) Odor control. The Operations Plan must describe the methods and procedures the facility will use to comply with OR 340-096-0070(4) and with 340-096-0150: Odors.

(e) Pathogen reduction. Unless the facility is exempt from pathogen reduction under OR 340-096-0140(1), the Operations Plan must describe methods the facility will use to comply with OR 340-096-0140: Pathogen Reduction, including:

(A) Methods the facility will use to comply with OR 340-096-0070(5) to achieve the pathogen reduction standards set out in OR 340-096-0140(2);

(B) Methods the facility will use for sampling and testing of composted material to assure that the required human pathogen reduction is being achieved; and

(C) Procedures the facility will use for handling composted material that does not meet pathogen reduction standards.

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(f) Vector attraction. The Operations Plan must describe methods the composting operation will use to comply with OAR 340-096-0070(6) to minimize the attraction of vectors such as rats, birds, flies.

(g) Closure. The Operations Plan must include a Closure Plan that must address:

(A) Removal of equipment and materials used to operate and maintain the facility;

(B) Disposal of unused feedstocks, partially processed residues and finished compost, **biogas, digestate and other products and materials**;

(C) Disposal of processed compost, **biogas, digestate, and other products and materials** that, due to concentrations of contaminants, cannot be marketed or used for beneficial purposes; and

(D) Abandonment of treatment facilities, including ponds and lagoons, and removal of residues, including a preliminary evaluation of potential impacts to soil and groundwater below ponds and treatment facilities.

(h) Post Closure. The Operations Plan must include a Post-Closure Plan to address groundwater and surface water issues after the facility is closed.

(i) Recordkeeping. The Operations Plan must describe the methods the facility will use for keeping records of:

(A) Weight and volumes of incoming feedstocks;

(B) Pathogen testing conducted under 5(e) of this rule;

(C) Complaints and actions taken to address complaints; and

(D) Any upsets or violations of the Operations Plan.

(6) As part of the Operations Plan approval process, the department will review with the composting facility the matters in (6)(a) through (l) of this rule. The department may require, either in its initial Operations Plan review or under section (3) of this rule, that an Operations Plan include any of the matters in sections (6)(a) through (l) of this rule if the department determines that such measures are necessary for the facility to meet the requirements of OAR 340-096-0070: Performance Standards, to comply with any other laws or regulations, or when required to correct other unacceptable conditions at a facility.

(a) Process controls. When required by the department, an Operations Plan must:

(A) Describe how the facility will monitor and record ~~compost~~ processing parameters including nutrient balance (C:N ratio), moisture content, aeration, pH and temperature and compost retention time; and

(B) Include a mass balance calculation showing all feedstocks and amendments and all products produced. The mass balance calculation must be detailed and use a standard unit of measurement throughout.

(C) Include any other information required by the department.

(b) Material management. When required by the department, an Operations Plan must:

(A) Describe how the facility will handle feedstocks, ~~and~~ composted material **and digestate** to prevent pathogen regrowth and cross contamination of piles.

(B) Describe how the facility will manage and dispose of ~~composted material~~ **compost, biogas, digestate and other products and materials** that due to concentrations of contaminants cannot be marketed or used for beneficial purposes.

(c) Removal of composted, **biogas, digestate and other products and materials**. When required by the department, an Operations Plan must provide for removal of ~~composted material~~ **compost, biogas, digestate and other products and materials** from the facility as frequently as possible, but not later than: ~~two years after processing is completed.~~

(A) two years after processing is completed, for finished compost, and

(B) six months after processing is completed, for all other products and materials, or longer if specified in a permit or by written approval by the Department.

(d) Incorporation of feedstocks. When required by the department, the Operations Plan must include a schedule for incorporating feedstocks into active compost piles **or the anaerobic digester**.

(e) Storage of feedstocks. When required by the department, the Operations Plan must:

(A) Identify designated areas where all feedstocks deposited at the site will be confined;

(B) Provide that accumulation of feedstocks does not create odor or vector problems, or create other nuisance conditions;

(C) Provide that undisposed residues must be kept to minimum practical quantities; and

(D) Provide for facilities and procedures for handling, recycling or disposing of feedstocks that are non-biodegradable by composting.

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(f) Salvage. When required by the department, the Operations Plan must provide procedures for recovery of materials such as metal, paper and glass so that recovery does not interfere with composting operations, or create unsightly conditions or vector harborage.

(g) Access Roads. When required by the department, the Operations Plan must:

(A) Provide for all-weather roads from the public highway or roads to and within the compost operation that are designed and maintained to prevent traffic congestion, traffic hazards and dust and noise pollution.

(B) Provide for effective barriers to unauthorized entry and dumping, such as fences, gates and locks.

(h) Fire Protection. When required by the department, the Operations Plan must provide for fire protection in compliance with applicable state and local fire regulations.

(i) Noise, dust and litter. When required by the department, the plan must provide for effective methods to reduce or avoid noise, dust, and litter, and to prevent tracking of mud or other materials off the facility;

(j) Containers. When required by the department, the operations plan must describe how the facility will clean and manage all containers at the facility.

(k) Vehicles. When required by the department, the Operations Plan must describe how all vehicles and devices operated by facility will be maintained and operated to prevent leaking, or spilling of feedstocks or finished compost, **biogas, digestate or other products or materials** while in transit.

(l) Truck Covers. When required by the department, the Operations Plan must describe how the facility will notify all incoming feedstock haulers that trucks must be covered or suitably cross-tied to prevent any load loss during shipment.

(m) Tanks and piping. When required by the department, the Operations Plan for composting facilities using anaerobic digestion must describe how piping and tanks will be maintained and operated to prevent explosions, fire, leaks and spills.

Stat. Auth.: ORS 459.045, 459A.025 & 468.020

Stats. Implemented: ORS 459.005, 459.015 & 459.205

Hist.: DEQ 6-2009, f. & cert. ef. 9-14-09

340-096-0100 (*amend*)

Special Rules Relating to Composting: Registration

(1) All composting facilities required to register with the department by OAR 340-096-0080(3)(a) must comply with this rule. Except as provided in OAR 340-096-0060(5), all facilities subject to this rule must complete registration before a facility may operate.

(2) After a facility has completed the requirements of OAR 340-093-0100 with respect to public notice and comment, if the department determines that the facility has met all of the requirements of OAR Divisions 93, 96, 97, and all other applicable statutes and regulations, the department will register the facility. The registration is a permit for purposes of OAR chapter 340, division 18 and chapter 340 divisions 93, 96, and 97, ~~except the following: OAR 340-093-0070(3); 340-093-0130; and 340-093-0140.~~

(3) All composting facilities registered under this rule must comply with the following:

(a) For facilities with department Conditions of Approval for operation of the facility, comply with all conditions;

(b) If required by the department, submit an annual report of the weight of feedstocks used for composting on a form provided by the department;

(c) If a composting facility discharges leachate or stormwater under a permit issued by the department, submit an annual report to the department with the sampling data required by the permit or permits;

(d) Immediately notify the department of any violation of the facility Conditions of Approval or OAR 340-096-0070: Performance Standards;

(e) Immediately notify the department of any significant change of status of the ~~composting~~ facility, including any change in the ownership or operation of the facility, the location of the ~~composting~~ operation, the type or volume of feedstocks used, and the composting process used by the facility;

(f) Keep all required records. If required by the department, maintain records for a minimum of ten years. In the case of a change in ownership of the ~~composting~~ facility, the owner is responsible for ensuring that the records are transferred from the previous owner and maintained for the required ten years;

(g) At the request of the department, submit any records or reports the department may require to ensure compliance with conditions of OAR chapter 340, Divisions 93, 96, and 97; and

(h) If required by the department, demonstrate financial assurance as provided in OAR 340-096-0001. The department may tailor the financial assurance requirements to the nature of the facility and may exempt a facility if, based on the information submitted under OAR 340-096-~~0070~~**0080**, an Operations Plan approved under OAR 340-

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0096-0090, and any other information available to the department, the department determines that the facility is not likely to generate significant amounts of residual waste materials or contamination from the operation of the facility that will remain at closure; and

(i) If required, pay the Engineering Review fee under OAR 340-097-0120(5).

Stat. Auth.: ORS 459.045, 459A.025 & 468.020

Stats. Implemented: ORS 459.005, 459.015 & 459.205

Hist.: DEQ 6-2009, f. & cert. ef. 9-14-09

340-096-0110 (*amend*)

Special Rules Pertaining to Composting: Composting Permit

(1) All composting facilities required by OAR 340-096-0060 to operate under a Composting Permit must comply with this rule. Except as provided in OAR 340-096-0060(5), all facilities subject to this rule must receive a Composting Permit before a facility may operate.

(2) After a facility has completed OAR 340-096-0090: Operations Plan Approval and the department has approved the facility Operations Plan, to receive a Composting Permit, the facility must:

(a) Pay the plan approval fee required ~~by~~ under OAR 340-097-0120(4); and

(b) If required, pay the Engineering Review fee under OAR 340-097-0120(5).

(3) After a facility has completed the requirements of section (2) of this rule, and after completing the requirements of OAR 340-093-0100 with respect to public notice and comment, if the department determines that the facility has met all of the requirements of OAR Divisions 93, 96, 97, and all other applicable statutes and regulations, the department will issue a Composting Permit for the facility. The Composting Permit is a permit for purposes of OAR chapter 340, division 18 and chapter 340 divisions 93, 96, and 97, ~~except the following: OAR 340-093-0070(3); 340-093-0130; and 340-093-0140. The requirements for screening under OAR 340-096-0080 replace the permit application requirements under OAR 340-093-0070(3); 340-093-0130; and 340-093-0140.~~

(4) All composting facilities permitted under this rule must comply with the following:

(a) Comply with OAR ~~340-096-0700~~0070: Performance Standards;

(b) Comply with all requirements of the facility Operations Plan;

(c) If required by the department, submit an annual report of the weight of feedstocks used for composting on a form provided by the department;

(d) If a composting facility discharges leachate or stormwater under a permit issued by the department, submit an annual report to the department with the sampling data required by the permit or permits;

(e) Immediately notify the department of any violation of the facility Operations Plan, Conditions of Approval, or OAR 340-096-0070: Performance Standards;

(f) Immediately notify the department of any significant change of status of the composting operation, including any change in the ownership or operation of the facility, the location of the facility, type or volume of feedstocks used, and the composting process used by the facility;

(g) Keep all required records. If required by the department, maintain records for a minimum of five years. In the case of a change in ownership of the composting facility, the owner is responsible for ensuring that the records are transferred from the previous owner and maintained for the required five years;

(h) Comply with OAR 340-097-0120(6)(c) with respect to fees;

(i) At the request of the department, submit any records or reports the department may require to ensure compliance with conditions of OAR chapter 340, divisions 93, 96, and 97; and

(j) If required by the department, demonstrate financial assurance as provided in OAR 340-096-0001. The department may tailor the financial assurance requirements to the nature of the facility and may exempt a facility if the department determines, based on the information submitted under OAR 340-096-0070, an Operations Plan approved under OAR 340-0096-0090, and any other information available to the department, the facility is not likely to generate significant amounts of residual waste materials or contamination from the operation of the facility that will remain at closure.

Stat. Auth.: ORS 459.045, 459A.025 & 468.020

Stats. Implemented: ORS 459.005, 459.015 & 459.205

Hist.: DEQ 6-2009, f. & cert. ef. 9-14-09

340-096-0120 (*amend*)

Special Rules Pertaining to Composting: Groundwater Protection

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- (1) All composting facilities using or proposing to use infiltration in soil as a method for managing leachate or stormwater must comply with this rule.
- (2) Methods of soil infiltration that are subject to this rule include, but are not limited to:
 - (a) Conducting any composting operations, including grinding, chipping, storing feedstocks, or composting feedstocks on surfaces that do not meet the requirements of OAR 340-096-0130: Leachate Collection Design and Management Requirements;
 - (b) Discharging any liquids from the composting facility, including leachate, ~~leachate-contaminated stormwater~~ **liquid digestate**, or stormwater, to filter strips, bioswales, or other similar features; and
 - (c) Discharging any liquids from the composting facility, including leachate, ~~leachate-contaminated stormwater~~ **liquid digestate**, or stormwater, to fields, pastures, cropland, or ditches.
- (3) All composting facilities subject to this rule must provide to the department the information described in OAR 340-096-0080(1) and (2), and any other information required by the department to evaluate to proposed use of infiltration in soil.
- (4) The department will evaluate the proposed infiltration methods to determine whether the proposed infiltration may cause likely adverse impacts to groundwater under OAR 340 Division 40.
- (5) The department may approve, disapprove, restrict, require modifications to, and attach conditions to proposed infiltration methods and procedures. When approved by the department, the proposed infiltration methods and procedures, and any limitations, restrictions, and conditions required by the department as part of its approval, must be incorporated into the facility Operations Plan under OAR 340-096-0090. For "low risk" facilities exempt from OAR 340-096-0090 under OAR 340-096-0080(3)(a), any limitations, restrictions, and conditions required by the department will be incorporated into the facility Conditions of Approval under OAR 340-096-0100.
- (6) As part of its approval under this rule, the department may require the facility to conduct groundwater sampling and monitoring, and submit analytical results to the department.
- (7) The department may prohibit the use of infiltration to soil as a method for managing leachate, **liquid digestate** or stormwater, for some or all actions, in some or all areas of a composting facility, if based on the factors in OAR 340-096-0080 and any other information available to the department, the department determines that infiltration at a facility is likely to cause an adverse impact to groundwater under OAR 340 Division 40. The department may require the facility to conduct operations on protective surfaces to prevent such impacts. Any such protective surface must comply with OAR 340-096-0130(8).
- (8) Any infiltration method that is an Underground Injection Control, as defined in OAR chapter 340, division 44, must comply with that Division.

Stat. Auth.: ORS 459.045, 459A.025 & 468.020
Stats. Implemented: ORS 459.005, 459.015 & 459.205
Hist.: DEQ 6-2009, f. & cert. ef. 9-14-09

340-096-0130 (*amend*)

Special Rules Pertaining to Composting: Biogas, Liquid Digestate and Leachate Collection Design and Management Requirements

- (1) All composting facilities that collect **biogas, liquid digestate**, leachate or stormwater in engineered structures must comply with this rule.
- (2) If required by the department, a person proposing to construct a new composting facility that is subject to this rule must prepare and submit to the department a Facility Design and Construction Plan, stamped by a registered professional engineer, as part of the Operations Plan approval under OAR 340-096-0090. The Plan must include site layout, **biogas collection and storage system**, lining and leachate collection/management system, **liquid digestate collection/management system** and stormwater and process water collection and treatment facilities.
- (3) If required by the department, any person subject to this rule must submit site design and engineering plans for any new facility construction such as site modifications, ~~compost~~ liners/pads, **tanks and piping**, closure of existing ~~composting~~ areas/systems, and/or other ancillary facilities.
- (4) All construction subject to this rule must be performed in accordance with the approved plans and specifications, including all conditions of approval. Any amendments to those plans and specifications must be approved in writing by the department.
- (5) If required by the department, prior to initiating construction, a facility subject to this rule must submit and receive written department approval of complete construction documents for the project to be constructed. The construction documents submitted must:
 - (a) Define the construction project team;
 - (b) Include construction contract documents specifying material and workmanship, and requirements to guide how the Constructor is to furnish products and execute work; and

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(c) Include a Construction Quality Assurance (CQA) plan describing the measures that will be taken to monitor and ensure that the quality of materials and the work performed by the Constructor complies with project specifications and contract requirements.

(6) If required by the department, within 90 days of completing construction, a facility subject to this rule must submit to the department a Construction Certification Report, prepared by a qualified independent party, to document and certify that all required components and structures have been constructed in compliance with the permit requirements and approved design specifications. This submittal ~~shall~~ **must** include "as constructed" facility plans which note any changes from the original approved plans.

(7) For a facility subject to section (6) of this rule, the facility must not accept feedstocks for storage, processing or composting in newly constructed facilities or areas until the department has accepted the Construction Certification Report. If the department does not respond in writing to the Construction Certification Report within 30 days of its receipt, the facility may accept feedstock at the facility in the newly constructed facilities or areas.

(8) Protective surface requirements. If a protective surface is required by the department under OAR 340-096-0120 for feedstock storing, mixing, grinding, or active processing areas, the surfaces must be designed to prevent release of leachate to surface water or groundwater from such areas. The surface must:

- (a) Consist of at least two (2) feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-6} cm/sec or an equivalent protection of groundwater;
- (b) Be capable of resisting damage from movement of mobile operating equipment and weight of stored piles;
- (c) Prevent ponding; and
- (d) Direct all collected leachate, **liquid digestate** and stormwater to collection devices.

(9) Leachate **and liquid digestate** storage design must assure collection of any leachate **and liquid digestate** generated from areas of feedstock collection and preparation and active composting areas and convey the leachate **and liquid digestate** to a storage basin, tank or other containment structure that has:

- (a) Adequate capacity to collect and convey the amount of leachate **and liquid digestate** generated. Volume calculations must be based on facility design, monthly water balance and precipitation data;
- (b) A geomembrane liner or alternative design approved by the department that is equivalent to at least two (2) feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-6} cm/sec;
- (c) Secondary containment for tanks used to store leachate **and liquid digestate**; and
- (d) Underground tanks must have a monitoring system to identify releases.
- (e) If part of the site design, dikes or slopes designed to maintain their structural integrity under conditions of a leaking liner and capable of withstanding erosion from wave action, overfilling or precipitation.

(10) Any leachate **or liquid digestate** collection system subject to this rule must describe the methods the facility will use to beneficially reuse or properly dispose of all collected ~~leachate~~ **liquids**.

(11) The department may approve alternative methods of compliance with this rule if the department determines that the proposed alternative methods will achieve the same level of protection. Proposed design alternatives to subsections (2) and (3) of this rule must be accompanied by engineered specifications for department review and approval.

Stat. Auth.: ORS 459.045, 459A.025 & 468.020

Stats. Implemented: ORS 459.005, 459.015 & 459.205

Hist.: DEQ 6-2009, f. & cert. ef. 9-14-09

340-096-0140 (amend)

Special Rules Pertaining to Composting: Pathogen Reduction

(1) All composting facilities must comply with this rule, except that agricultural operations as defined by ORS 467.120(2)(a) producing composted material, **only** for on-farm use, are not subject to the requirements of this rule. The department may require that an agricultural operation comply with this rule if the department determines that such compliance is necessary to protect human health or the environment.

(2) All composted material must meet the following limits:

- (a) For composted material produced from Type 1 or Type 3 feedstock, or a mix of Type 1 and 3 feedstocks, analysis must be performed for salmonella or fecal coliform and meet the following limits:
 - (A) Salmonella analysis must result in less than 3 Most Probable Number per 4 grams of total solids (dry weight).
 - (B) Fecal coliform analysis must result in less than 1,000 Most Probable Number per gram of total solids (dry weight).
- (b) For composted material produced from Type 1 or Type 3 feedstock with less than 50% by volume of Type 2 feedstock, analysis must be performed for salmonella or fecal coliform and meet the following limits:

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(A) Salmonella analysis must result in less than 3 Most Probable Number per 4 grams of total solids (dry weight).

(B) Fecal coliform analysis must result in less than 1,000 Most Probable Number per gram of total solids (dry weight).

(c) For composted material produced from feedstock containing more than 50% volume of Type 2 feedstock in the initial pile, analysis must be performed for fecal coliform and meet the following limits:

(A) Analysis must result in less than 1,000 Most Probable Number per gram of total solids (dry weight).

(3) Methods of Pathogen Reduction. All composting facilities subject to this rule must document and implement a pathogen reduction plan that addresses requirements of the Code of Federal Regulations, 40 CFR Part 503. The plan must include a Process to Further Reduce Pathogen (PFRP), pursuant to under 40 CFR Part 503 Appendix B, item (B)(1), dated February 19, 1993, that must include one of the following elements:

(a) Using either the within-vessel composting method or the static aerated pile composting method, the temperature of the active compost pile must be maintained at 55 degrees Celsius or higher for three days;

(b) Using the windrow composting method, the temperature of the active compost pile must be maintained at 55 degrees Celsius or higher for 15 days or longer. During the period when the compost is maintained at 55 degrees Celsius or higher, there must be a minimum of five turnings of the windrow; or

(c) An alternative method that permittee can demonstrate achieves an equivalent reduction of human pathogens.

(4) Testing compost for pathogen reduction. All composting facilities subject to this rule must test composted material with the following frequency:

(a) If less than 2,500 tons of composted material from Type 1 and 2 feedstocks are produced per year, testing must be conducted once a year.

(b) If more than 2,500 tons of composted material from Type 1 and 2 feedstock are produced per year, testing must be conducted every 5,000 tons of feedstock used or a maximum of once every three months.

(c) If less than 2,500 tons of composted material from Type 3 feedstocks are produced per year, testing must be conducted once every four months.

(d) If more than 2,500 tons of composted material from Type 3 are produced per year, testing must be conducted every 5,000 tons of feedstock used or monthly.

(5) Placeholder for testing standards for liquid digestate

(6) Placeholder for standards and requirements for Type 4 compost (specified risk material). We might want this in a separate rule. Concept - if compost from Type 4 cannot be demonstrated to be free of harmful prions, then the use of the compost would be restricted, prohibiting its use in residential or commercial settings where humans could be exposed, or use on crops or on grazing land.

Stat. Auth.: ORS 459.045, 459A.025 & 468.020

Stats. Implemented: ORS 459.005, 459.015 & 459.205

Hist.: DEQ 6-2009, f. & cert. ef. 9-14-09

340-096-0150 (amend)

Special Rules Pertaining to Composting: Unacceptable Odors

(1) The department recognizes that the microbial metabolic activity in compost piles **and anaerobic digestion operations** causes odors, and that composting facilities cannot completely eliminate all odors. All composting facilities must be designed, constructed, and operated in manner that, to the greatest extent practicable consistent with proper facility design and operation, controls and minimizes odors that are likely to cause adverse impacts outside the boundaries of the facility.

(2) The department may require a facility to prepare an Odor Minimization Plan under section (5) of this rule, and may further require the facility to modify operations and otherwise implement all reasonable and practicable measures determined necessary by the department to control and minimize adverse impacts of odors outside the boundaries of the facility. In deciding whether to require an Odor Management Plan, the department will consider the frequency, duration, strength and intensity of odors; the number and frequency of complaints; and the number of people impacted.

(3) When a composting facility receives a complaint about odor, the facility must:

(a) Contact the complainant within 24 hours to discuss the complaint;

(b) Keep a record of the complaint; the name and telephone number of the complainant, when available; the date the complaint was received; and

(c) **Investigate site conditions and operations to determine the extent of an odor problem;**

(d) Immediately initiate procedures at the facility as appropriate to ~~reduce or eliminate~~ **minimize** the odor identified by the complainant; and

~~(d)~~**(e)** Initiate procedures as appropriate to ~~prevent~~ **minimize** the release of odors in the future.

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(4) A facility must notify the department:

- (a) If a facility receives complaints from five or more individuals about a given event, or
- (b) If an odor event lasts for more than 24 hours without resolution or mitigation of the problem creating the odor event.

(5) Odor Minimization Plan. If required by the department under OAR 340-096-0090 or this rule, the compost facility must develop an Odor Minimization Plan to minimize odors. The plan must include:

- (a) A management plan for malodorous **feedstocks** ~~loads~~;
- (b) Procedures for receiving and recording odor complaints, immediately investigating any odor complaints to determine **if a problem exists**, the cause of **excessive** odor emissions, and remedying promptly any odor problems at the facility;
- (c) Additional odor-minimizing measures, which may include the following:
 - (A) Avoidance of anaerobic conditions in **processes that are designed for aerobic composting** ~~the composting material~~;
 - (B) Use of mixing for favorable composting conditions;
 - (C) Formation of windrow or other piles into a size and shape favorable to minimizing odors;
 - (D) Use of end-product compost as cover to act as a filter during early stages of composting;
 - (E) Specification of a readily available supply of bulking agents, additives or odor control agents;
 - (F) Procedures for avoiding delay in processing and managing feedstocks during all weather conditions; and
 - (G) Methods for taking into consideration the following factors prior to turning or moving composted material:
 - (i) Time of day;
 - (ii) Wind direction;
 - (iii) Percent moisture;
 - (iv) Estimated odor potential; and
 - (v) Degree of maturity.