Ohio Administrative Code

Rule 3745-42-07 Best available technology for connection into sanitary sewers and centralized collection and treatment of sewage, industrial waste and other waste.

Effective: November 13, 2025

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules and federal statutory provisions referenced in this rule, see rule 3745-42-01 of the Administrative Code.]

(A) Definitions.

(1) "Centralized collection and treatment" means a disposal system that serves more than one source of sewage, industrial waste, or other waste.

(2) "Larger common plan of development or sale" means a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.

[Comment: This definition was taken from the Ohio national pollutant discharge elimination system (NPDES) general permit for storm water discharges associated with construction activity.]

(B) Purpose and applicability.

(1) The purpose of this rule is to establish, as part of a permit to install and plan approval program under Chapter 6111. of the Revised Code, a definition for best available technology for disposal systems permitted under this chapter.

(2) This rule is applicable to disposal systems designed to treat sewage, industrial waste and other waste. Except as provided in paragraph (C) of this rule, a disposal system shall meet best available technology criteria to be approved.

[Comment: A brief description of how a project achieves best available technology is to be submitted

as part of a permit to install application or plan approval in accordance with rule 3745-42-03 of the Administrative Code.]

(C) Exemptions.

(1) The director, by order, may grant or deny an exemption for any person from the sanitary sewer connection criteria in paragraphs (D)(1)(a)(i) to (D)(1)(a)(v) of this rule and permit the installation of an alternative disposal system. It is the burden of the petitioner requesting the exemption to demonstrate to the satisfaction of the director that technical, financial, environmental, legal or physical barriers prevent connection to sanitary sewers. The petitioner has the burden of demonstrating to the satisfaction of the director that the alternative to the sanitary sewer connection will not adversely affect human health or the environment.

(2) A petition for exemption shall be submitted in writing and signed in accordance with rule 3745-42-03 of the Administrative Code, prior to submittal of any NPDES permit, permit to install or plan approval applications for the alternative disposal system, and include, at a minimum, the following:

(a) Description of project.

(b) Identification and justification of technical, financial, environmental, legal or physical barrier.

(c) Description of the alternative disposal system.

(d) Any additional information as the director may require to protect human health or the environment.

(3) An incomplete petition will not be considered. Any petitioner who submits an incomplete petition will be notified within thirty days of receipt of the application of the nature of deficiency and of the director's refusal to consider the petition until the deficiency is corrected. Failure to correct the deficiency within thirty days of notice may result in denial of the petition.

(4) The director shall grant or deny the petition for exemption by order within ninety days of the date on which a complete petition for exemption is received.

(5) The director may revoke an exemption approved in accordance with paragraphs (C)(1) and (C)(2) of this rule if any condition upon which the exemption was issued changes.

(D) Best available technology for connection into sanitary sewers.

(1) Connection into existing publicly owned or regional sanitary sewers is required for the disposal of sewage when said sewers are accessible and available. Accessible and available is determined as follows:

(a) The connection would not conflict with either any areawide waste treatment management plan adopted in accordance with section 208 of the act, in accordance with section 6111.03 of the Revised Code, approved regional sewage service and treatment plan or a connection ban imposed in accordance with Chapter 3745-11 of the Administrative Code.

(b) The disposal system receiving the sewage has or is expected to have capacity to adequately collect and treat the sewage.

(c) For an existing structure, where any part of a structure from which the waste is generated is within three hundred feet of the nearest boundary of the right-of-way within which the existing sanitary sewer is located.

[Comment: For example, if an existing business is located two hundred and forty feet from the corner of the building to the sanitary sewer right-of-way, the business will meet the requirements to connect to the sewer.]

(d) For a proposed structure not included within a larger common plan of development or sale, where any property line of the lot is within three hundred feet of the nearest boundary of the right-of-way within which the existing sanitary sewer is located.

[Comment: For example, if a new business is proposed on a single lot, and the edge of the property line is two hundred and ninety feet from the existing sanitary sewer right-of-way, the business will meet the requirements to connect to the sewer.]

(e) For two or more proposed structures (e.g., commercial business park), where any property line of the larger common plan of development or sale is within a distance of two hundred feet multiplied by the number of proposed structures up to a maximum distance of five thousand feet from the nearest boundary of the right-of-way within which the existing sanitary sewer is located, measured from the closest property line to the sanitary sewer right-of-way.

[Comment: For example, if phase one of a proposed commercial park will contain five structures, and phase two of the project, that will not be constructed for six years, will contain six structures, and the sanitary sewer right-of-way is one thousand four hundred feet away from the nearest property line in phase one of the development, the commercial park will meet the requirements to connect since two hundred feet per structure multiplied by eleven structures equals two thousand two hundred feet, which is greater than one thousand four hundred feet. It should be noted that even if phase two is constructed first, connection to sewers would still meet the requirements to connect since the larger plan of development results in a structure being located within two thousand two hundred feet.]

(f) On a case by case basis for sewage generated at industrial processing operations taking into consideration factors including but not limited to volume of waste to be disposed, ability of permittee to operate an individual disposal system, demonstrated economic hardship and compliance with other applicable rules and laws.

[Comment: Industrial processing operations can include businesses that generate industrial or other waste, such as metal finishing operations and food processing facilities, and have the potential to co-mingle sewage.]

(2) Installation of new centralized collection and treatment is required for the disposal of sewage when the cumulative design flow of sewage for a proposed larger common plan of development or sale is greater than twenty-five thousand gallons per day if sanitary sewers are not accessible or available as per paragraph (D)(1) of this rule. This requirement does not preclude multiple or "cluster" type systems.

[Comment: Multiple and cluster type systems are subject to permit to install rules in this chapter.]

(3) The director may permit the installation of an alternative disposal system for the disposal of industrial waste on a case by case basis taking into consideration factors including, but not limited, to compatibility of waste, treatability of waste, volume of waste to be disposed, ability of the applicant to operate an individual disposal system, demonstrated economic hardship and compliance with other applicable rules and laws, including rule 3745-1-05 of the Administrative Code.

[Comment: Connection into an existing publicly owned or regional sanitary sewer for the disposal of industrial waste when said sewer is accessible and available as defined in paragraph (D)(1) of this rule is preferred.]

(4) In order to protect human health and the environment, the director may order, as authorized under Chapter 6111. of the Revised Code, the connection into existing sanitary sewers or installation of new centralized collection and treatment in situations beyond the connection distances or flow values stated in this rule.

[Comment: Paragraphs (D)(1)(a) to (D)(1)(f) of this chapter contain the requirements that the director is to give consideration to the technical feasibility and economic reasonableness in the issuance of the order.]

(5) Notwithstanding the issuance or non-issuance of a permit to install or plan approval for a non publicly owned or non regional disposal system treating sewage, whenever a publicly owned or regional sanitary sewer system becomes accessible and available, the permittee shall properly abandon the disposal system and connect into the publicly owned or regional sanitary sewer system and properly close the disposal system. Connection into the publicly owned or regional sanitary sewer system is to be made within three years of accessibility and availability, unless an alternative time frame is authorized by the director, considering the age of the disposal system, level of treatment being provided, economic hardship, and compliance with applicable laws.

(6) Notwithstanding the issuance or non-issuance of a permit to install or plan approval for a disposal system treating industrial waste or other waste or industrial waste or other waste and sewage, whenever a publicly owned or regional sanitary sewer system becomes accessible and available, the director may require the disposal system to be properly abandoned and connected into the publicly

owned or regional sanitary sewer system and properly modify or close the disposal system and may consider factors including, but not limited, to compatibility of waste, treatability of waste, volume of waste to be disposed, economic hardship and compliance with other applicable laws. The director will specify a time frame for connection.

(E) Best available technology for treatment of sewage, industrial waste and other waste. As applicable, the applicant shall include the following items in the disposal system design or treatment technology selection:

(1) Effluent limitations or design criteria listed in the definition of best available demonstrated control technology in rule 3745-1-05 of the Administrative Code.

[Comment: Rule 3745-1-05 of the Administrative Code contains specific effluent limitations or design criteria for sanitary wastewater treated by conventional treatment technologies, industrial direct discharges, categorical industrial indirect discharges and wastewater discharges resulting from clean-up of response action sites contaminated with volatile organic compounds.

(2) Effluent limitations established under Chapter 3745-33 of the Administrative Code.

(3) Design criteria under this chapter.

(4) Industrial waste pre-treatment standards under Chapters 3745-3 and 3745-36 of the Administrative Code.

(5) Treatment standards for sewage sludge under Chapter 3745-40 of the Administrative Code.

(F) Design requirements for storage facilities.

(1) A storage facility shall conform to the following:

(a) Maintain the isolation distance requirements listed in table F-1 of this rule. The director may reduce the isolation distance requirements if the storage facility contains class A treated sewage or liquid industrial waste.

[Comment: Isolation distances. In the case of any reference to a building, the measurement is to be taken from the outside wall of the building. In the case of any reference to a treatment works or a component of the treatment works or a pump station, the measurement will be taken from the closest point on the perimeter of the treatment works, the component of the treatment works, or the pump station. In the case of any reference to a lagoon or storage facility, the measurement will be taken from the outer bank or the toe of the impoundment.]

Siting criteria	Minimum lagoon isolation distance (feet)	Minimum solid storage isolation distance (feet)
Occupied building	Three hundred	Three hundred
Private potable water source not owned by the person land applying treated sewage or liquid industrial waste	Three hundred	Three hundred
Private potable water source owned by the person land applying treated sewage or liquid industrial waste	Fifty	Fifty
UIC class V injection well	Three hundred	Three hundred
Property line	Fifty	Fifty
Dwelling as defined in rule 3701-29-01 of the Administrative Code	One thousand	One thousand

(b) For earthen impoundments, have inner and outer slopes no steeper than one foot vertical to three feet horizontal.

(2) Siting requirements for storage facilities. Storage facilities may not:

(a) Be located within drinking water source water protection area for all public water systems using ground water (community water supply, transient, non-community, and non-transient, non-community) unless:

[Comment: Information on the location of drinking water source protection areas, inner management zones, emergency management zones, public water systems wells, and public water wells and intakes can be obtained from the Ohio EPA division of drinking and ground water source water assessment and protection program at (614) 644-2752, by email at whp@epa.ohio.gov or on the internet at https://epa.ohio.gov/divisions-and-offices/drinking-and-ground-waters/source-water-protection-and-underground-injection-control-(uic)/source-water-assessment-and-protection-

program.]

(i) The proposed site is approved by the director.

(ii) Additional engineering controls to minimize the chance of liner failure are included.

(iii) A minimum of fifteen feet of low permeability material exists between the bottom of the liner and the top of the uppermost aquifer system.

(iv) A vertical separation distance of at least three feet is maintained between the bottom of the storage facility liner and bedrock.

(v) The storage facility is located outside the sanitary isolation radius of a public water system well, as determined in accordance with rule 3745-9-04 of the Administrative Code.

(vi) The storage facility is located outside of the inner management zone and have an isolation distance of at least three hundred feet away from a water supply well for a community water supply, transient, non-community (TNC) or non-transient, non-community (NTNC) public water system using ground water. The director may reduce the isolation distance from a water supply well for storage facilities that contain highly treated and disinfected treated sewage or liquid industrial waste.

(b) Be located within the emergency management zone of a public water system using surface water or within one thousand five hundred feet of the drinking water intake, whichever results in a greater distance from the intake.

(3) Storage volume requirements. A storage facility shall be designed with adequate storage capacity to prevent a discharge to surface waters, except as permitted by an NPDES permit. The minimum storage requirements in table F-2 of this rule shall be met. The director may determine a larger storage volume to ensure that sufficient storage is provided to meet in stream water quality standards during exceptionally dry periods, or to ensure sufficient storage is provided to accommodate inspections or offline repairs.

[Comment: A continuous discharge occurs when a discharge by a land application system is

permitted to surface waters year-round.]

Type of land application system	Minimum storage volume requirement
Controlled discharge permitted by an NPDES permit and land application	Two weeks of storage volume
Continuous discharge permitted by an NPDES permit and land application	Evaluated on a case by case basis
Any other land application system	Four months of storage volume

(a) The storage volume shall be calculated using the disposal system design flow and consider all hydraulic inputs and outputs, including the following:

(i) The number of storage days necessary.

(ii) Whether or not there will be a controlled discharge in addition to land application.

(iii) The size of the land application area.

(iv) Site specific rainfall and evaporation data.

(v) The potential for solids accumulation.

(b) A smaller storage volume or no storage volume may be approved for a disposal system that includes a continuous discharge permitted under an NPDES permit.

[Comment: The Ohio State university extension bulletin number 860, "Reuse of Reclaimed Wastewater Through Irrigation", demonstrates an acceptable procedure for calculating the amount of storage volume necessary for non-discharging land application systems. The director may accept alternate design criteria, provided that the permit to install demonstrates to the satisfaction of the director that there will be no adverse impact to surface water or ground water, as a result of the alternate design criteria.]

(4) Freeboard requirements for storage facilities shall meet the freeboard requirements in table F-3 of this rule and be equipped with a depth marker which clearly indicates the minimum freeboard level.

Design parameter	Minimum freeboard requirement for storage facility
Design flow less than one thousand gallons per day	Two feet
Volume of storage facility less than ten thousand gallons	Two feet
Concrete impoundment	Two feet
Earthen or partially earthen impoundment that holds more than ten thousand gallons	Three feet

(5) Liner requirements for storage facilities. Except as provided in paragraphs (F)(5)(a) and (F)(5)(j) of this rule, the storage facility shall have a recompacted clay liner designed in accordance with the following unless otherwise specified in the detailed engineering plans approved by the director.

(a) No soil material used in the liner shall be placed or recompacted during weather conditions, such as freezing temperatures or rain, that would interfere with adequate compaction or control of moisture content.

(b) Soil material used in the liner shall be placed in six inch to eight inch loose lifts at a moisture content between zero per cent and four per cent above optimum moisture content as determined by standard laboratory proctor.

(c) Soil material used in the liner shall be recompacted by using standard engineering compaction methods and recompacted to a minimum compaction rate of ninety-five per cent of standard dry density as determined by ASTM D698 or greater as required to achieve 1×10^{-7} centimeters per second maximum permeability. The most representative moisture-density curve is to be used to determine compaction rates.

(d) Compacted soil material used in the liner shall be tested for density and moisture content at a rate of one test per lift, with a minimum of one test for any day that soil material is compacted.

(e) When a density or moisture content test is not conducted in compliance with the approved detailed engineering plans or the terms and conditions of the permit to install, each lift shall be scarified and the moisture content adjusted and the soils recompacted for the area that extends from the location of the failed test to one-half the distance to the location of the nearest passed test, in all directions. The recompacted area is then retested for compliance.

(f) The results of density and moisture content testing shall be submitted to Ohio EPA.

(g) Soils used for the liner shall have from fifteen to thirty per cent clay content and be classified as CL or SC by the unified classification system (ASTM designation D2487). The remaining portion of the liner material should have a wide range of soil particles in the silt, fine sand and coarse sand range.

(h) When the classification of the proposed liner material can not be determined in accordance with the unified classification system, hydraulic conductivity tests shall be performed on the proposed lining material to confirm its classification and ensure the proposed liner will be in accordance with paragraph (F)(5) of this rule.

(i) There shall be a minimum of three feet of fine-grained soil over fractured rock outcrops or other highly permeable material, which may include the recompacted liner.

(j) The thickness of the recompacted clay liner shall be in accordance with table F-4 of this rule. Separation distance is:

(i) For any storage facility not located within a drinking water source water protection area, the vertical distance between the top of the storage facility liner and the top of the uppermost aquifer system or top of the first continuous significant zone of saturation underlying the storage facility, whichever is encountered first.

(ii) For any storage facility located within a drinking water source water protection area, the vertical distance between the bottom of the storage facility liner and the top of the uppermost aquifer system or top of the first continuous significant zone of saturation underlying the storage facility, whichever is encountered first.

Available vertical separation distance	Thickness of recompacted clay liner
Three feet or more, but less than five feet	Twenty-four inches
Five feet or more, but less than ten feet	Eighteen inches
Ten feet or more	Twelve inches

(6) If a synthetic liner is used in lieu of a recompacted clay liner, the liner shall conform to the following:

(a) Include, at a minimum, six inches of properly prepared subbase placed underneath the synthetic liner.

(b) Unless otherwise specified in the detailed engineering plans approved by the director, have a maximum permeability of 1×10^{-7} centimeters per second.

(c) Be designed based on considerations for potential freeze and thaw damage and potential exposure to ultraviolet rays.

(7) If the storage facility is constructed of reinforced concrete, the concrete shall be, at a minimum, five inches thick and include non-metallic water stops for all joints.