STATE OF OHIO

Permits to Install and Plan Approvals for Water Pollution Control

Chapter 3745-42 of the ADMINISTRATIVE CODE

Most Recent Revision:

Adopted February 15, 2012
Effective March 1, 2012

Ohio Environmental Protection Agency
Division of Surface Water
Permits & Compliance Section

TABLE OF CONTENTS

3745-42-01 **Definitions.**

(A) "Applicable laws" means any applicable provisions of Chapter 6111. of the Revised Code and rules promulgated thereunder, the federal water pollution control act (33 U.S.C. sections 1251 et seq., as amended through July 1, 2007) and 40 CFR Chapter I, subchapters D, N and O (effective July 1, 2008).

(B) "Applicant" means the person applying for the permit to install or plan approval.

(C) "Aquifer system" means one or more geologic units or formations that are wholly or partly saturated with water and are able to store, transmit and yield significant amounts of water to wells or springs.

(D) "ASTM" means the American society for testing and materials. ASTM test methods referenced in this chapter are generally available in public libraries or from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, at 610/832-9555, or available in electronic format at www.astm.org.

(E) "ASTM C117-04" means an American society of testing and materials (ASTM) standard test method for materials finer than seventy-five-micrometers (No. 200) sieve in mineral aggregates by washing, as that standard was approved by ASTM on August 1, 2004.

(F) "ASTM C136-06" means an American society of testing and materials (ASTM) standard test method for sieve analysis of fine and coarse aggregates, as that standard was approved by ASTM on February 15, 2006.

(G) "ASTM D4318-05" means an American society of testing and materials (ASTM) standard test methods for liquid limit, plastic limit, and plasticity index of soils, as that standard was approved by ASTM on March 1, 2005.

(H) "ASTM D698-07e1" means the American society for testing and materials (ASTM) standard test methods for laboratory compaction characteristics of soil using standard effort, as that standard was approved on April 15, 2007.

(I) "ASTM D2487-06" means the American society for testing and materials (ASTM) standard practice for classification of soils for engineering purposes, as that standard was approved on May 1, 2006.

(J) "At-grade system" means an onsite disposal system, where treated sewage is conveyed to a dispersal field that is constructed on or above in situ soil and covered by soil.

(K) "CBOD5" or "five-day carbonaceous biochemical oxygen demand" has the same meaning as defined in 40 C.F.R.136 (effective July 1, 2008).

(L) "Class A treated sewage" means treated sewage treated in accordance with table K-2 of rule 3745-42-13 of the Administrative Code.

(M) "Class B treated sewage" means treated sewage treated in accordance with table K-3 of rule 3745-42-13 of the Administrative Code.

(N) "Class C treated sewage" means treated sewage treated in accordance with table K-4 of rule 3745-42-13 of the Administrative Code.

(O) "Coal waste" means residuals and earthen materials, in dry or slurry form that are removed or otherwise separated from the product coal after physical or chemical processing, cleaning or concentrating of coal. Coal waste does not include post-combustion materials that are fly ash, bottom ash, flue gas desulfurization waste or fluidized bed desulfurization wastes, and also does not include materials that are regulated as "solid waste," "infectious waste" or "hazardous waste" as those terms are defined in Chapter 3734. of the Revised Code.

(P) "Coal waste facility" means a disposal facility where fine coal waste is dewatered and disposed of in a slurry impoundment or where fine or coarse coal waste is disposed of in a dry placement area. Coal waste facility does not include any facility that is used for the temporary holding or treatment of liquid wastes.

(Q) "Coal mining operations" means any coal mining activity that is defined in division (H) of section 1513.01 of the Revised Code as coming under the jurisdiction of the chief of the division of mineral resource management under Chapter 1513. of the Revised Code.

(R) "Complete," in reference to an application for a permit, means that the application contains all the information necessary for processing the application. Designating an application complete for purposes of permit processing does not preclude the director from requesting or accepting any additional information.

(S) "Controlled discharge" means an NPDES permitted discharge that can occur when certain stream conditions exist or when land application can not occur.

(T) "Dense glacial till" means tills that impede the movement of treated water away from the site and cause the formation of perched saturated conditions in the soil profile, especially with the addition of wastewater.

(U) "Director" means the director of the Ohio environmental protection agency.

(V) "Discharging land application system" means a land application system that:

(1) Regardless of whether a land application contract allows isolation distance requirements to be waived, does not meet the isolation distance requirements in this rule;

(2) Proposes to land apply on sites where drain tiles are, or will be, less than two vertical feet below final grade;

(3) Proposes to land apply on frozen or snow covered ground;

(4) Proposes to land apply during precipitation events; or

(5) Proposes a point source discharge to waters of the state.

(W) "Disposal system" means disposal system, as defined in section 6111.01 of the Revised Code.

(X) "Drinking water source protection area for a public water system using ground water" means the surface and subsurface area surrounding a public water supply well or wells that will provide water to the well or wells within five years as delineated or endorsed by Ohio EPA under the wellhead protection program and the source water assessment and protection program.

(Y) "Emergency management zone" or "EMZ" means the surface and subsurface area in the immediate vicinity of a public water system intake as delineated or endorsed by Ohio EPA under the source water assessment and protection program within which the public water supply owner or operator has little or no time to respond to potential contamination from a spill, release, or weather related event. The standard emergency management zone boundary consists of a semi-circle that extends five hundred feet upstream of the intake and one hundred feet downstream of the intake, except as modified due to local conditions.

(Z) "EPA" means environmental protection agency.

(AA) "Holding tank" means any device that is not part of a larger disposal system and that is used to accumulate or store sewage or industrial waste that: (1) is not hazardous waste as defined by rule 3745-51-03 of the Administrative Code and (2) must be hauled for recycling, treatment or disposal. Holding tank does not include such a device in a fixed location that is connected by pipe or hose to a disposal system.

[Comment: A tank used for flow equalization, septage receiving at a treatment works or sludge holding at a treatment works is not considered a holding tank. These tanks are part of a larger disposal system.]

(BB) "Hydraulic balance" means an accounting of the hydraulic inputs and outputs of a land application system.

(CC) "H 20 loading" is defined by figure 3.7.6A of the 17th edition of "AASHTO Standard Specifications for Highway Bridges," copyright 2005. This publication is available from the American association of state highway and transportation officials, 444 North Capitol Street N.W., Suite 249, Washington, DC 20001, telephone (202) 624-5800, fax (202) 624-5806, web page https://bookstore.transportation.org.

(DD) "Industrial waste" means industrial waste as it is defined in section 6111.45 of the Revised Code.

(EE) "Inner management zone" means the surface and subsurface area within a drinking water source protection area for a public water system using ground water surrounding a public water supply well or wells that will provide water to the well or wells within one year as delineated or endorsed by Ohio EPA under the wellhead protection program and the source water assessment and protection program.

(FF) "Install" or "installation" means to begin actual construction, erect, locate or affix any disposal system.

(GG) "Karst" means a terrain with an assemblage of landforms such as sinkholes and caves that are due to weathering of predominantly carbonate bedrock.

(HH) "Lagoon" means any earthen or partially earthen impoundment that is used for the treatment of sewage.

(II) "Land application" means evenly spreading or spraying treated sewage onto the surface of the land for final treatment or disposal.

(JJ) "Land application area" means the site or location where treated sewage is applied to the ground surface for treatment or disposal.

(KK) "Land application contract" means a deed showing ownership, or a contract or agreement that describes the land where treated sewage will be applied and that allows treated sewage to be land applied.

(LL) "Land application management plan" means a management plan governing the operation, maintenance, effluent limits, and monitoring requirements of a land application system.

(MM) "Land application system" means a disposal system that uses land application, thereby minimizing or eliminating the discharge of treated sewage to waters of the state.

(NN) "Low permeability" means a permeability of less than two tenths of one inch per hour.

(OO) "Modify" or "modification" means any physical change in, or change in the method of operation of a disposal system to allow it to process water pollutants:

(1) In materially increased quantities;

(2) Of a materially different character; or

(3) In materially higher concentrations.

The addition of new connections to a public sewage system shall not be considered a modification of the sewage system.

(PP) "New source" means any disposal system for which an owner or operator undertakes a continuing program of installation or modification or enters into a binding contractual obligation to undertake and complete, within a reasonable time, a continuing program of installation or modification, after January 1, 1974, and that at the time of installation or modification would have otherwise been subject to the provisions of this chapter.

(QQ) "Normal ground water table" means the shallowest depth of soil that is saturated with water for an extended or permanent time period.

(RR) "NPDES" means national pollutant discharge elimination system.

(SS) "Occupied building" means any building that is regularly occupied by people, is owned by a person other than the owner of the disposal system, and is located on a plat of land separate from the plat of land on which the disposal system is installed or operated.

(TT) "Ohio EPA" means the Ohio environmental protection agency or its director, as the context or other law or regulations may require.

(UU) "Operator" means the person in responsible charge of operating and maintaining the disposal system in compliance with the NPDES permit or land application management plan. The operator may or may not be the owner of the disposal system.

(VV) "Person" means person, as defined in section 6111.01 of the Revised Code.

(WW) "Professional soil scientist" means an individual with a baccalaureate degree with a major in agronomy, soils, or a closely allied field of principles of pedology to soil classification, investigation, education, and consultation and on the effect of measured, observed and inferred soil properties and their use, and who is a member of the Ohio association of pedologists or the American registry of certified professionals in agronomy in crops and soil (ARCPACS).

[Comment: A list of the professional soil scientists in Ohio can be obtained from the association of Ohio pedologists web site. The web link for this site is: http://www.ohiopedologist.org/.]

(XX) "Public water system" has the same meaning as defined in rule 3745-81-01 of the Administrative Code.

(YY) "Publicly owned sanitary sewers" means any centralized sewerage system other than those that are owned by a private or semi-public entity.

(ZZ) "Restricted access site" means a site on which treated sewage may be placed with a limited probability that the public will come into contact with the treated sewage. Such sites include, but are not limited to, agricultural crop fields (i.e., nonhuman food crops), and fenced-off meadows, pastures, woodlands, landscaping areas and other private property.

(AAA) "Sewage" means sewage, as defined in section 6111.01 of the Revised Code.

(BBB) "Sewerage system" means sewerage system, as defined in section 6111.01 of the Revised Code.

(CCC) "Significant zone of saturation" means a zone of saturation that may act as a preferential pathway of migration away from the limits of storage or application of treated sewage.

(DDD) "Soil absorption system" means the final treatment component of an on site sewage treatment system that utilizes absorption and adsorption to treat and disperse the treated sewage into subsurface soils.

(EEE) "Source water assessment and protection program" means Ohio EPA's program based on the Safe Drinking Water Act, 42 U.S.C. 300 (f), as amended in 1996, and approved by U.S. EPA, November, 1999.

(FFF) "Storage facility" means the part of a treatment works, such as a tank, an earthen or man-made impoundment, that is used solely for the storage of treated sewage.

(GGG) "Surface waters of the state" means surface waters of the state, as defined in rule 3745-1-02 of the Administrative Code.

(HHH) "Total inorganic nitrogen" means the sum of nitrite-nitrogen, nitrate-nitrogen and ammonia-nitrogen.

(III) "Total maximum daily load" means total maximum daily load, as defined in rule 3745-2-02 of the Administrative Code.

(JJJ) "Treated sewage" means sewage treated by a treatment works.

(KKK) "Treatment works" means treatment works, as defined in section 6111.01 of the Revised Code.

(LLL) "UIC class V injection well" means underground injection control (UIC) class V injection well as defined in paragraph (E) of rule 3745-34-04 of the Administrative Code.

(MMM) "Unrestricted access site" means a site on which treated sewage may be placed with a high potential for the public to come into contact with the treated sewage. Such sites include, but are not limited to, golf courses, parks, lawns and playing fields.

(NNN) "Water pollutant" means any sewage, industrial waste or other waste, as defined by section 6111.01 of the Revised Code.

(OOO) "Waters of the state" means waters of the state, as defined in section 6111.01 of the Revised Code.

(PPP) "Wellhead protection program" means Ohio EPA's program based on the Safe Drinking Water Act, 42 U.S.C. 300 (f), as amended in 1986, and approved by U. S. EPA, November 1992.

[Comment: Federal regulations ("Code of Federal Regulations" or "C.F.R."). Information and copies may be obtained by writing to: "Superintendent of Documents, PO Box 371954, Pittsburgh, PA 15250-7954." The full text is also available in electronic format at http://www.gpoaccess.gov/cfr/index.html. Compilations are also available for inspection and copying at the state library of Ohio and most public libraries.]

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(A) Applicability of Chapter 3745-42 of the Administrative Code.

(1) Permit to install and plan approvals for disposal systems.

(a) Except as provided in paragraphs (B) to (D)(3) of this rule, no person shall cause, permit or allow the installation of a new disposal system or cause, permit or allow the modification of a disposal system without first obtaining an individual permit to install, a general permit to install or plan approval in accordance with this chapter and all other applicable rules and laws.

(b) An application for a permit to install for any disposal system shall include detailed plans in accordance with this chapter and all other applicable rules and laws.

(c) The approval of a permit to install shall constitute approval of the detailed plans for the disposal of waste and for the disposal system pursuant to sections 6111.44 and 6111.45 of the Revised Code.

(2) The director, at his discretion, may issue an order requiring any person planning to install or modify, or in the process of installing or modifying, any disposal system, which is otherwise exempted, to obtain a permit to install or plan approval before proceeding with installation or modification if, in the director's judgment, operation of the disposal system after installation or modification might result in a violation of the criteria established in paragraph (A) of rule 3745-42-04 of the Administrative Code.

(3) The director, at his discretion or where required by federal laws or regulations, may issue a single permit to install or plan approval having application to all pollutants of any kind emanating from any disposal system, or may issue a single permit to install or plan approval having applicability to more than one disposal system controlled by a common owner or operator located in the same county.

(4) Notwithstanding any other provision of this rule, compliance with this chapter does not relieve any person from the requirements of Chapters 3734. or 3714. of the Revised Code and rules adopted thereunder, including provisions prohibiting the establishment of a facility.

(B) Permit to install and plan approval exemptions from applicability. Unless deemed otherwise by the director, a permit to install or plan approval, whichever is applicable, is not required for:

(1) Site preparation activities in accordance with paragraphs (B)(1)(c) to (B)(1)(c)(xix), of this rule.

(a) Risk to the owner or operator.

(i) This rule does not in any way guarantee that a permit to install will be issued.

(ii) The implementation of any of the activities described in paragraphs (B)(1)(c) to (B)(1)(c)(xix) of this rule are at the entire risk of the owner or operator.

(iii) If a permit to install is issued, any necessary design changes, and the costs associated with those design changes, including costs due to delayed construction, in order to comply with the terms of the permit to install are entirely at the owner or operator's risk. Any costs associated with these design changes shall not be used as part of any cost effectiveness evaluation.

(b) General prohibitions and restrictions.

(i) Site preparation activities performed prior to the issuance of a permit to install shall:

(a) Be in accordance with all other applicable rules and laws, including rule 3745-1-05 of the Administrative Code and Chapter 3745-42 of the Administrative Code; and

[Comment: If applicable, it is recommended that an applicant obtain a national pollutant discharge elimination system permit, prior to beginning site preparation activities.]

(b) As applicable, not begin until any of the following are obtained:

(i) A 401 water quality certification and isolated wetland permit; or

(ii) A construction site storm water permit.

(ii) Site activities that are prohibited prior to obtaining a permit to install include:

(a) The construction of buildings or structures that are directly related to the installation of a treatment works or disposal system and will convey sewage to a disposal system, including:

(i) Residential homes;

(ii) Clubhouses or banquet halls; and

(iii) Restaurants;

(b) The construction of buildings or structures that will house or shelter any part of a disposal system, including storage facilities or sewage treatment lagoons;

(c) The construction or installation of tankage and other equipment that will be used to store, process, treat or test wastewater to be discharged from the site to a municipal sewer or in accordance with an NPDES permit;

(d) The construction of any other structure or building determined by the director to convey sewage to the proposed disposal system;

(e) The construction activities directly related to the construction or installation of any onsite sewage treatment system soil dispersal component. A soil and site evaluation for any soil based treatment system shall be approved prior to beginning any site preparation activities; and

(f) The construction activities directly related to any land application area. A soil and site evaluation for any land application area shall be approved prior to beginning any site preparation activities.

[Comment: Rule 3745-42-13 of the Administrative Code outlines the requirements for a land application system.]

(c) Except as provided in paragraphs (B) to (B)(1)(b)(ii)(f) of this rule, site preparation activities that are not directly related to the installation of any treatment works or disposal system that can be undertaken prior to obtaining a permit to install include:

(i) Constructing buildings or structures that will not convey sewage to the proposed disposal system, such as:

(a) Warehouses;

(b) Office buildings; and

(c) Garages;

(ii) Clearing the site of existing vegetation, old buildings, or old equipment;

(iii) Grading and clearing of land, stripping and stockpiling topsoil, earthwork cut and fill for foundations in preparation for construction;

(iv) Installing temporary site access roadways and parking areas;

(v) Installing temporary construction equipment storage areas;

(vi) Storing of construction equipment including temporary buildings and trailers for equipment storage and for construction offices;

(vii) Except as provided in paragraphs (B)(1)(b)(ii)(e) to (B)(1)(b)(ii)(f) of this rule, exploratory excavation and borings to assess the suitability of a site for the intended building or installation activities;

(viii) Provided no concrete is poured:

(a) Excavating building footers, pilings, foundations, pads, and platforms; or

(b) Installing concrete forms and reinforcing bar for any concrete footers, pilings, foundations, pads and platforms;

(ix) Installing temporary utilities for site construction trailers, including electricity, gas, and communication, provided the owner or operator of the disposal system has submitted the complete plans for the disposal system to the director and has notified the director that this activity will be taken prior to the issuance of the permit to install;

(x) Removing old equipment from existing buildings;

(xi) Installing any temporary construction dust control systems, such as sprinklers;

(xii) Installing any signage or traffic control signs;

(xiii) Installing any utility poles by a utility company;

(xiv) Installing temporary erosion and sedimentation control systems including hay bales, silt fences, rip-raps, sandbags or any sedimentation pond used for mitigating storm water during construction activity. The director may exempt other sedimentation ponds provided the sedimentation pond will not be used as part of a disposal system;

(xv) Installing new landscaping, including trees, bushes and seeding of disturbed earthwork;

(xvi) Installing landscaping fencing;

(xvii) Installing temporary fences and signs around the construction site;

(xviii) Stockpiling of stone, soil and other materials for future construction; and

(xix) Storing onsite portable parts and equipment;

(2) Coal waste facilities. provided that:

(a) The coal waste facility is located entirely within the permitted area of a coal mining operation regulated under Chapter 1513. of the Revised Code; and

(b) The owner or operator of the coal mining operation has applied for and obtained approval for the design, construction, operation and closure of the coal waste facility from the division of mineral resources management of the Ohio department of natural resources in accordance with Chapter 1513. of the Revised Code and the rules adopted thereunder;

(3) External interceptors for fats, oils or greases (FOG) in accordance with paragraphs (B)(3)(a) to (B)(3)(a)(xi) of this rule.

(a) Except as provided in paragraph (B)(3)(b) of this rule, a permit to install or plan approval is not required for an external FOG interceptor, where the external FOG interceptor:

(i) Discharges to a publicly owned or public utilities commission of Ohio regulated disposal system owned or operated by the holder of a valid Ohio national pollutant discharge elimination system (NPDES) permit issued by the director;

(ii) Is designed by a registered or licensed professional, such as a registered professional engineer, and installed in accordance with applicable sections of the Ohio plumbing code set forth in division-level designation 4101:3 of the Administrative Code;

(iii) Is designed to have a minimum contact time within the interceptor of twenty minutes;

(iv) Is designed to remove at least ninety-five per cent of the incoming FOG or to meet applicable local FOG effluent limits imposed by the owner/operator of the disposal system, whichever is more stringent;

(v) Incorporates an observation or monitoring well or device at its discharge point, prior to entering the disposal system;

[Comment: A control manhole that is used for observation or montoring of effluent from a FOG interceptor and is located upstream

of the collector sewer meets the intent of an observation or monitoring well or device.]

(vi) Serves only establishments that generate no peak flows of no more than five hundred gallons per minute (g.p.m.) of FOG laden sewage;

(vii) Is designed to retain intercepted FOG material without permitting discharge of said material to the sanitary sewerage system;

(viii) Is designed in such a way as to not allow material to permanently accumulate within the FOG interceptor;

(ix) Is maintained on a planned and scheduled basis so as to properly provide its intended purpose, FOG interception;

(x) Is designed to facilitate ease of cleaning and maintenance as well as not contaminating the surrounding area; and

(xi) Is permitted, inspected and approved by the plumbing authority having jurisdiction.

(b) The director may require a permit to install or plan approval, as applicable, for any FOG interceptor that receives industrial wastewater or wastewater that does not meet the definition of sewage, as defined by Chapter 6111. of the Revised Code;

(4) A disposal system for a not for profit car wash, including those used for charity fund raisers by school or church groups, unless the director determines the need to protect human health or the environment or if the director determines there is a potential for discharge to waters of the state;

(5) A disposal system for a mobile carpet cleaner, unless the director determines the need to protect human health or the environment or if the director determines there is a potential for discharge to waters of the state. Waste from a mobile carpet cleaner shall be disposed of at a publicly owned treatment works or a commercial wastewater treatment works with an effective NPDES permit;

(6) A disposal system for mobile power washers, unless the director determines the need to protect human health or the environment or if the director determines there is a potential for discharge to waters of the state;

(7) Recycle systems inside a building, such as those used for:

(a) Hydrostatic test water;

(b) Water conservation; or

(c) Non contact cooling water, where the cooling tower:

(i) Does not discharges to waters of the state; and

(ii) Has a water supply rate less than ten thousand gallons per day;

(8) Oil and water separators, provided:

(a) The oil and water separator has a volume not to exceed one thousand gallons;

(b) The effluent from the oil and water separator is conveyed to a publicly owned treatment works;

(c) The owner obtains a letter, or another form of documentation such as a plan approval, from the publicly owned treatment works, acknowledging that they are aware of the oil and water separator; and

(d) Any industrial waste is disposed of in accordance with all applicable rules and laws;

(9) Under the sink grease traps;

(10) Any conveyance, system of conveyances or treatment system in accordance with:

[Comment: A conveyance system may include roads, catch basins, curbs, gutters, ditches, man-made channels or basins, or storm drains.]

(a) A phase one or phase two permit for a municipality with a separate storm sewer system (MS4) that:

(i) Is owned or operated by a public body;

(ii) Is designed and used for collecting or treating primarily non-industrial storm water, typical for a municipal storm water system;

(iii) Does not operate as a combined sewer; and

(iv) Is not part of a publicly owned treatment works; or

(b) A construction general storm water permit;

(11) A wastewater treatment works, provided:

(a) The treatment works is located upstream of the building drain;

(b) The treatment works has a design flow of not more than five hundred gallons per day;

(c) The treatment works will be utilized for industrial or commercial wastewater and will discharge to a publicly owned treatment works with an effective NPDES permit;

(d) The treatment works is in accordance with all applicable rules and laws, including rule 3745-42-05 of the Administrative Code and Chapters 3745-3 and 3745-36 of the Administrative Code and all applicable sections of the Ohio plumbing code. The director may require a permit to install or an NPDES permit to protect public health or the environment;

(e) The treatment works is not subject to the national categorical pretreatment standards discharge limits, in accordance with subchapter (N) of Chapter 40 of the Code of Federal Regulations, effective June 1, 2007; and

(f) The treatment works is limited to:

(i) Neutralization;

(ii) Silver recovery;

(iii) Photo processing;

(iv) Treating dental or medical office wastewater;

(v) Treating dry cleaning wastewater; or

(vi) Activated carbon treatment for treating petroleum contaminated ground water, where the temporary unit is used on site for less than two years and is designed to achieve less than detection for benzene, toluene, ethylbenzene or xylene; or

(12) A manhole, provided the manhole:

(a) Is located on a sewer lateral and upstream of any collector sewer;

(b) Includes not more than one influent pipe; and

(c) Does not house any equipment, such as a pump.

(C) The director may waive the permit to install requirement for:

(1) A site preparation activity not listed in paragraphs (B)(1)(c) to (B)(1)(c)(xix) of this rule, as a site preparation activity that can be undertaken prior to obtaining a permit to install, provided:

(a) The site preparation activity is in accordance with all applicable rules and laws; and

(b) Prior to beginning the site preparation activity, the permittee provides the director with a written request for approval of any activity that includes:

(i) A detailed description of any proposed site preparation activity;

(ii) An explanation of why the site preparation activity is in accordance with all applicable rules and laws;

(iii) An explanation of how all applicable permits will be obtained prior to the site preparation activity; and

(iv) A description of the potential adverse consequences that could occur to the permittee if the director did not approve the site preparation activities prior to obtaining a permit to install; or

(2) Any wastewater treatment works not listed in paragraphs (B)(11)(f)(i) to (B)(11)(f)(vi) of this rule, provided:

(a) The treatment works is located upstream of the building drain;

(b) The treatment works has a design flow of not more than five hundred gallons per day;

(c) The treatment works will be utilized for industrial or commercial wastewater and will discharge to a publicly owned treatment works with an effective NPDES permit;

(d) The treatment works is in accordance with all applicable rules and laws, including rules 3745-42-05, 3745-3-04, and 3745-3-09 of the Administrative Code, applicable sections of the Ohio plumbing code, and Chapters 3745-3 and 3745-36 of the Administrative Code;

(e) The treatment works is not an industry subject to the national categorical pretreatment standards discharge limits, in accordance with subchapter (N) of Chapter 40 of the Code of Federal Regulations, effective June 1, 2007; and

(f) The owner or operator submits a written request for a waiver that includes a description of the treatment works and a demonstration of compliance with the requirements in paragraphs (C)(2)(a) to (C)(2)(e) of this rule.

(D) Permit to install modification. No permit to install or plan approval, whichever is applicable, is required for the modification of a disposal system if:

(1) After modification, the disposal system will be a type that could have been installed without a permit to install or plan approval;

(2) The result of the modification on environmental quality is so slight that the director has, by rule, exempted the modification from the requirements of paragraphs (A) to (A)(3) of this rule; or

(3) The director has determined that the proposed work will not significantly change the overall disposal system.

(E) Administrative changes to a permit to install or plan approval. The director may make administrative changes to a permit to install or plan approval. An administrative change to the permit to install or plan approval is an amendment to the permit to install or plan approval issued by Ohio EPA that does not result in a modification or alteration of the treatment or disposal system. An administrative change to a permit to install or plan approval may be made for the following reasons:

(1) To correct technical errors, such as errors in calculations, that result in the improper determination of permit to install or plan approval conditions;

(2) To correct typographical errors;

(3) To change a term or condition of the permit to install or plan approval that does not constitute modification or alteration of the treatment or disposal system; or

(4) To update administrative information including, but not limited to, the name of the applicant or telephone number, address or name of the treatment or disposal system.

(F) Termination of a permit to install or plan approval.

(1) A permit to install shall terminate within eighteen months of the effective date of the permit to install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete, within a reasonable time, a continuing program of installation or modification.

(2) A plan approval shall terminate within eighteen months of the effective date of the plan approval if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete, within a reasonable time, a continuing program of installation or modification.

(3) The director may modify a permit to install or plan approval to extend these dates of expiration by up to twelve months if the applicant submits, within a reasonable time before the termination date, a written request containing information that, in the judgment of the director, adequately justifies an extension of time. No appeal taken from denial of extension of an expiration date shall prevent termination of a permit during the period between denial of extension and final disposition of the appeal unless prohibited by any court or administrative body having jurisdiction over the matter.

(G) Revocation of a permit to install or plan approval.

(1) The director may revoke a permit to install or plan approval if the director concludes at any time that any applicable laws have been or are likely to be violated.

(2) The director may also revoke a permit to install or plan approval at the permittee's request if the director determines that granting the requested revocation will not result in the violation of any applicable laws. When a permittee requests a revocation, the director, without prior hearing, shall make a final determination on the application.

(H) Transfer of a permit to install or plan approval.

(1) The director may transfer a permit to install or plan approval for a disposal system to a new owner of a disposal system. Transfers shall only be made for permits to install or plan approvals that:

(a) Contain operating conditions;

(b) Are for systems that are currently in the installation process;

(c) Are for systems that are currently undergoing a continuing program of modification; or

(d) Are for systems where construction has not yet commenced.

(2) Written application for a transfer must be submitted to the director at least sixty days prior to any proposed transfer. The transferee shall be responsible for informing Ohio EPA that it will assume the responsibilities of the original permittee transferor. The director may prevent the permit transfer if he

concludes that it will jeopardize compliance with the terms and conditions of the permit. The director shall notify both the original permittee transferor or the transferee in writing of his decision.

(I) Applicability of rules of procedure. A permit to install or plan approval shall be issued, modified, revoked or denied and may be challenged in accordance with the provisions of the rules of procedure of the Ohio EPA agency, Chapter 3745-47 of the Administrative Code.

[Comment: The Code of Federal Regulations can generally be found in public libraries and can be viewed electronically online at http://www.gpoaccess.gov/cfr/index.html and purchased by writing to: "Superintendent of Documents, Attn.: New Orders, PO Box 371954, Pittsburgh, PA 15250-7954."]

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R.C. 119.032 review date: 03/01/2013

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Prior Effective Dates: 1/1/1974, 8/15/1982, 9/18/1987, 4/20/1994, 4/12/1996, 4/27/1998, 11/30/2001, 10/17/2003

3745-42-03 **Requirements for applications and engineering plans.**

(A) Applications for both permits to install and plan approvals required by rule 3745-42-02 of the Administrative Code shall be made using forms prepared by Ohio EPA and shall contain such information as the director deems necessary to determine whether the criteria of rule 3745-42-04 of the Administrative Code are met.

(1) Any of the following must be signed and certified by a professional engineer licensed by the Ohio state board of registration for professional engineers and surveyors:

(a) Plans for disposal systems, treatment works or sewerage systems including, but not limited to:

(i) Sanitary sewer extensions;

(ii) Pump stations or distribution systems;

(iii) Prefabricated unit installations (e.g., small sewage treatment plants);

(iv) Sewage treatment plants;

(v) Land application systems;

(vi) Holding tanks;

(vii) Mound systems;

(viii) Septic tanks and leach fields;

(ix) Drip irrigation systems;

(x) Monofills (disposal sites for fly ash, foundry sand or other similar industrial wastes); and

(xi) Industrial or commercial treatment works;

(b) Reports on process evaluations at treatment works and sewerage systems including combined sewer overflow operational or long term control plan approvals, sewer system evaluations and infiltration/inflow analysis plans;

(c) Operation and maintenance manuals for disposal systems;

(d) POTW local limit technical justification submissions for approval in accordance with pretreatment rules in Chapter 3745-3 of the Administrative Code;

(e) General plans or facility plans, including feasibility and cost analysis;

(f) Impoundment closure plans; and

(g) Beneficial reuse or recycling plans that involve engineering calculations including, but not limited to, structural fill projects, building foundations and road beds.

(2) Applications for permits to install or plan approvals that are not required to be signed and certified by a professional engineer licensed by the Ohio state board of professional engineers and surveyorsinclude:

(a) Municipal sludge management plans using agronomically sound land application rates;

(b) Beneficial use or recycling projects using agronomically sound land application rates;

(c) Pretreatment program modification requests other than technical justification modification requests for local limits including, but not limited to, changes in sewer use ordinances, local laws and local regulations; and

(d) Groundwater monitoring plans.

(3) In addition to the specific types of documents in paragraph (A)(1) of this rule, the director may require other permit application documents to be prepared and sealed by a licensed professional engineer to protect public welfare or to safeguard life, health or property.

(B) Applications for permits to install and plan approvals shall be signed by the person, firm, agency or entity responsible for constructing or funding the construction of the disposal system. If, after construction, the disposal system will be turned over to a public entity or another party to own, operate and maintain, the director may require both persons responsible for construction and the future owner or operator to sign the permit application and be subject to the terms and conditions of the permit issued thereafter. The application shall be signed as follows:

(1) In the case of a corporation, by a principal executive officer of at least the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility;

(2) In the case of a partnership, by a general partner;

(3) In the case of sole proprietorship, by the proprietor; and

(4) In the case of a municipal, state, federal or other governmental facility, by the principal executive officer, the ranking elected official or other duly authorized employee.

(C) In the case of plan approval for the land application of sludge, the application shall be signed by either the president, vice-president or highest ranking corporate officer with offices located in the state, or the owner of the entity planning to apply the sludge, and the highest elected official of the municipality from which the sludge is generated.

(D) The signatures shall constitute personal affirmation that all statements or assertions of fact made in the application are true and complete and comply fully with applicable state requirements and shall subject the signatory to liability under section 2921.13 of the Revised Code.

(E) Before the director will review an application package, it shall contain:

(1) The appropriate application fees (Comment: See section 3745.11 of the Revised Code);

(2) Two copies of the permit to install application (e.g., Ohio EPA form 4309) with all blanks filled in and the form signed in accordance with paragraph (B) of this rule; and

(3) Four complete sets of the detailed plans and at least two copies of the contract specifications. The plans and specifications shall be submitted in accordance with the following requirements, as applicable.

(a) All detailed plan sheets shall be eleven inches by seventeen inches, twenty-two inches by thirty-four inches, or twenty-four inches by thirty-six inches. Each sheet shall have a sufficient margin to allow for proper binding and complete title blocks. Each set of plan sheets submitted on paper shall be bound together.

(b) Each set of detailed plans shall:

(i) State the name and type of building or project;

(ii) State the owner's name and address including the county and township or municipality;

(iii) Contain the name of the engineer preparing the plans, the original or an electronic signature of the engineer and the engineer's stamp on the title sheet of the detailed plans when required by paragraph (A) of this rule;

(iv) For projects that connect or discharge to the local sewer authority's disposal system, contain a cover sheet that has the local sewer authority's signature or a letter from the local sewer authority that expresses support for the project;

(v) Contain cross sections and plan and profile views of all the unit processes within the treatment system and their capacities, with all views drawn to scale and clearly labeled;

(vi) Identify the dimensions and relative elevations of structures;

(vii) Include, unless contained in a separate contract specification book, identification of the location and outline of equipment, and the location, size, and ASTM designation of piping and joints;

(viii) Contain a hydraulic profile of the flow of water through the unit processes that indicates points of chemical addition, control instrumentation, alarm levels, and monitoring equipment;

(ix) Include, unless contained in a separate contract specification book, the equipment or product specifications;

(x) Where applicable, describe the ultimate method of sludge disposal; and

(xi) Include, unless contained in a separate contract specification book, identification of stand-by equipment, including the number of each component and each components capacity, location, size, and intended operation.

(c) Each set of detailed plans shall contain a site plan showing, where applicable:

(i) Adjacent properties, storage areas, contours, existing and final grades and drainage courses, property lines, existing and proposed buildings, parking areas, drives, elevations, locations of proposed and existing treatment works, and all sewers that will collect and transport sewage or industrial waste;

(ii) Sanitary sewers, storm sewers, and water lines or locations of water wells, including manholes and pump stations;

(iii) The location of each entry to the public sewer;

(iv) Isolation distances from the treatment works to any water wells and property lines; and

(v) The north arrow.

(d) Each set of detailed plans shall contain a vicinity map showing surrounding roadways, railroad tracks, and major water courses.

(F) The director may waive submittal requirements identified in paragraph (E)(3) of this rule for specific technologies or project types, such as industrial projects that require a permit to install prior to funding procurement, as necessary to efficiently review the application package and administer this chapter.

(G) The director may allow electronic submittal of any document required to be submitted by this rule. If the director allows electronic submittal, he may allow the permittee to submit only one electronic copy of the document, even if the permittee would be required to submit more than one copy in non-electronic form by this rule.

(H) In addition to the information contained in paragraphs (A) to (E) of this rule, applications for permits to install for industrial waste treatment works that have a direct discharge to waters of the state or are tributary to a treatment works shall include, as applicable, all of the following:

(1) Written approval from the sewer authority that will be responsible for treating the industrial waste. The application shall contain a statement by the sewer authority that it is aware of the proposed project and agrees to accept the treated industrial waste from the applicant's facility. The approval and statement may be in the form of a letter from the sewer authority, or each set of plans must be signed by the sewer authority. If the applicant is proposing to connect to, or construct or modify an existing sewerage system tributary to, a sanitary sewer that is not owned or operated by the sewer authority responsible for treating the industrial waste, then the connection, construction or modification shall be through an approved sewer tap to the sewerage system;

(2) Schematic diagrams of the processes that generate, collect, treat, and dispose of the industrial wastes. In the schematic diagram, the applicant shall:

(a) Clearly label each major process unit in sufficient detail to allow the agency to have a clear understanding of the types and quantities of pollutants that may be generated

(b) Identify the average and maximum flow rates (expressed as gallons per day) for each major process unit that generates industrial waste, and identify the frequency and volume of spent chemical dumps and the concentrations of pollutants in the influents and effluents for the pretreatment facility; and

(c) If the plans are for a modification to an existing, approved facility, distinguish between existing facilities and new facilities; and

(3) An engineering report. In the engineering report, the applicant shall:

(a) Provide a project summary that presents the objectives to be achieved by the proposed facility, and generally describes the means proposed to accomplish the objectives, and the anticipated results. The project summary shall also identify the appropriate categorical regulations, the appropriate local effluent limitations, and any applicable court orders or pretreatment standards;

(b) Briefly describe the manufacturing process or unit process generating the industrial waste stream, and:

(i) Delineate the process unit operations in the facility producing the waste streams and explain the relationship between these operations and how the waste streams will be treated;

(ii) Describe the operating schedules; and

(iii) Characterize each waste stream by its average and maximum flow values (expressed in gallons per minute and gallons per day) and chemical and physical characteristics, including the concentrations of pollutants and maximum allowable loadings of all pollutants that may be present in the waste stream. Particular emphasis shall be directed towards applicable standards, toxic pollutants, and pollutants that the industrial waste pretreatment facilities are designed to remove; and

(c) Briefly describe proposed and existing treatment facilities that will be used to treat the industrial waste streams described in paragraph (G)(3)(b) of this rule, as well as standby and auxiliary equipment for each treatment unit shown in the detail plans, and at a minimum:

(i) Describe the average and maximum flow rates (expressed in gallons per minute and gallons per day) that each treatment unit will process, excluding stand-by and auxiliary equipment, as well as the frequency and concentrations of pollutants in all dumps of the process line;

(ii) Describe the chemical and physical characteristics of the waste stream that each treatment unit will receive, including the concentrations of all pollutants that the unit is designed to remove or that may affect the operation of the unit;

(iii) Describe the chemical and physical characteristics of the treated waste stream for each treatment unit;

(iv) State the pertinent specifications of each treatment unit and each major equipment item, including stand-by and auxiliary equipment;

(v) State the criteria used to design or size each treatment unit and the associated equipment; and

(vi) Describe the ultimate means of disposal of residuals, sludges, and collected industrial wastes.

(I) The director may waive requirements identified in paragraphs (H)(1) to (H)(3) of this rule for specific technologies or project types as necessary to efficiently review the application and administer this chapter.

Effective: 12/1/2005

R.C. 119.032 review date: 10/17/2008

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Rule Amplifies: R.C. 6111.03, 6111.44, 6111.45, 6111.46
Prior Effective Dates: 1/1/1974, 8/15/1982, 9/18/1987, 10/17/2003

3745-42-04 Criteria for decision by the director.

(A) The director shall issue a permit to install or plan approval on the basis of the information appearing in the application or information gathered by or furnished to the Ohio environmental protection agency, or both, if he determines that the installation or modification and operation of the disposal system or land application of sludge will:

(1) Not prevent or interfere with the attainment or maintenance of applicable water quality standards contained in Chapter 3745-1 of the Administrative Code;

(2) Not result in a violation of any applicable laws; and

(3) Employ the best available technology.

(B) Prior to making the determinations set forth in paragraph (A) of this rule, the director shall obtain and consider input through intra-agency coordination in accordance with table 1 of this rule.

(C) In deciding whether to grant or deny a permit to install or plan approval, the director may take into consideration the social and economic impact of water pollutants or other adverse environmental impacts that may be a consequence of issuance of the permit to install or plan approval.

(D) The director may impose such special terms and conditions as are appropriate or necessary to ensure compliance with the applicable laws and to ensure adequate protection of environmental quality.

(E) Within one hundred eighty days after a completed application is filed, the director shall issue or propose to issue or deny a permit to install or plan approval.

(F) Political subdivision agreements.

(1) The director may enter into an agreement with a political subdivision that owns or operates a disposal system and that intends to extend its sewerage system, which agreement authorizes a qualified official, position or employee of the political subdivision, as determined by the director, to review permit to install applications and plans for the extension of the sewerage system.

(2) Under such agreement, the qualified official, position or employee of the political subdivision may be authorized to review permit to install applications and plans for sewerage system extensions or replacements of gravity sewer lines less than or equal to eighteen inches in diameter and force mains and pump stations with maximum design flows of less than or equal to 2.0 million gallons per day. At a minimum, said qualified person shall be a registered professional engineer licensed to practice engineering in the state of Ohio.

(3) In performing the review of the permit to install application and plans as specified by the agreement, the qualified official or employee of the political subdivision shall, at a minimum, review the permit to install application and plans for conformance with all applicable laws and standard engineering practices which pertain to the project.

(4) Under such agreement, the director shall outline the various terms of the authorized review. These terms may include geographical boundaries where review may occur, criteria for review, timeframes, identification of qualified officials responsible for performing review and any other requirements deemed necessary by the director.

(5) Under such agreement, the fees calculated in accordance with division (C) of section 3745.11 of the Revised Code and a copy of the actual permit to install application shall be immediately forwarded to the Ohio EPA upon receipt by the political subdivision covered under an agreement under this rule.

(6) Pursuant to an agreement under this rule, the director shall issue the appropriate action based upon the recommendation of the certification signed by the qualified official upon submission to the director of:

(a) A recommendation to the director to grant or deny the permit and approve or disapprove the plans;

(b) A certification signed by the qualified official that the permit to install application and plans meet or fail to meet requirements of all applicable laws and standard engineering practices;

(c) For approvals or denials, a prepared permit to install or denial package in standard Ohio environmental protection agency format, complete except for issuance and effective dates and the director's signature; and

(d) The reviewed permit to install application and plans.

(7) In the event that a project reviewed under such an agreement is appealed to the environmental review appeals commission or an Ohio EPA hearing examiner, the political subdivision responsible for review shall provide necessary technical support to the director.

(8) The director may periodically audit the review performed by the political subdivision under any agreement and may terminate the agreement for poor quality review, failure to follow Ohio EPA criteria, policies, procedures and rules, or the loss of the qualified official, position or employee.

(9) The term of any agreement under this rule may be for a period of up to five years. The director and the political subdivision may renew such agreement.

(10) Paragraph (F) of this rule in no way supersedes any other statute or rules adopted under Chapter 6111. of the Revised Code.

Table 1. Identification of projects for which the Ohio environmental protection agency division of surface water shall coordinate with the Ohio environmental protection agency divisions of solid and infectious waste management (DSIWM), air pollution control (DAPC) and drinking and ground waters, ground water section (DDAGW) and/or their respective successors.

– Project type	Coordinate with DSIWM?	Coordinate with DAPC?	Coordinate with DDAGW?
Domestic sewage			
– Wastewater treatment plant - new or expanding system	As needed	As needed	As needed
– Lagoon/impoundment	As needed	As needed	Yes
– Onsite system (subsurface disposal) greater than one thousand gallons per day	As needed	As needed	Yes
Industrial/process wastewater			
– Lagoon/impoundment	As needed	As needed	Yes
– Onsite system (subsurface disposal)	As needed	As needed	Yes
– Wastewater treatment plant - new or expanding system	As needed	As needed	As needed
Other project types			
– Biosolids composting facility	Yes	As needed	As needed
– Exempted wastes "landfill" (fly ash, etc.)	As needed	Yes	Yes
– Biosolids monofill	As needed	Yes	Yes
– Leachate collection/treatment, sediment ponds, etc. located at solid waste landfill	Yes	As needed	Yes
All other projects will be reviewed on a case-by-case basis and may involve review under various program authorities at the discretion of the director and/or his representatives.			

Replaces: Part of 3745-31-05

Effective: 10/17/2003

R.C. 119.032 review date: 10/17/2008

Promulgated Under: R.C. 119.03
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3745-42-05 **Design flow and waste strength requirements for treatment works sized for one hundred thousand gallons per day or less.**

(A) Except as provided in paragraphs (A)(1) to (A)(5) of this rule, the minimum design flows and waste strengths in table A-1 of this rule shall be used to design a treatment works sized for one hundred thousand gallons per day or less. The design flow and the waste strength shall be based on the existing and proposed services at the facility, and the justification for the proposed design flow and the proposed waste strength shall be submitted with the permit to install application. In addition to table A-1 of this rule, the director may also consider additional relevant engineering design data, including flow monitoring data, computer flow modeling data, flow equalization facilities, potential impacts to upstream sewers and sampling data for waste strength characterization.

[Comment: If the place to be served by a wastewater treatment works is not listed in table A-1 of this rule, the applicant or consultant should discuss the design flow with an Ohio EPA district office representative so that a proper flow value and waste strength can be chosen.]

(1) Flow monitoring. The director may consider flow monitoring data in addition to the minimum design flow requirements in table A-1 of this rule when evaluating the design of a treatment works sized for one hundred thousand gallons per day or less, provided that the flow monitoring data is obtainable and documented on a daily basis.

(a) The flow monitoring data shall be submitted with the permit to install application and shall:

(i) Be from the facility for which the treatment works is being designed, and be representative of the range of operating conditions that are expected to occur, which includes considering the months, days and hours of operation; or

(ii) Be from a place of like kind, like usage, and located in a similar climate, and be representative of the range of operating conditions that are expected to occur, which includes considering the months, days and hours of operation.

(b) For facilities that operate year-round, at least twelve months of flow monitoring data shall be provided. For seasonal facilities, flow monitoring data shall be provided for the entire operational period within a calendar year.

(2) Computer flow modeling. The director may consider computer flow modeling data in addition to the design flow requirements in table A-1 of this rule when evaluating the design of a treatment works sized for one hundred thousand gallons per day or less. The computer flow modeling data shall be submitted with the permit to install application.

(3) Flow storage and equalization facilities. The director may consider flow equalization facilities at the treatment works or upstream of the treatment works in addition to the design flow requirements in table A-1 of this rule, when evaluating the design of a treatment works sized for one hundred thousand gallons per day or less. For facilities that have significant variations in daily flow for each day of the week, the director may allow the storage facilities to equalize the flow over several days. The values in table A-1 shall be used to determine the storage volume needed and the design flow of the treatment units following the storage facility. If a facility has a significant variation in daily flow through the week, month or season and lagoon treatment is proposed, the director may allow the proposed lagoon design to be based on an average daily flow and average daily organic loading that is lower than the peak flow values and organic strength values in table A-1, provided sufficient flow monitoring data is provided for the director's consideration. The flow equalization data shall be submitted with the permit to install application.

(4) Potential impacts to upstream sewers. The director may consider potential impacts to upstream sewers in addition to the design flow requirements in table A-1 of this rule when evaluating the design of a treatment works sized for one hundred thousand gallons per day or less. Any information regarding the potential impacts to upstream sewers shall be submitted with the permit to install application.

(5) Sampling data for waste strength characterization. The director may consider sampling data in addition to the organic loading concentration ranges in table A-1 of this rule when evaluating the design of a treatment works. Sampling data shall be provided that is indicative of normal operations. For seasonal operations, the data shall be reflective of the time when the facility is most used. This data shall include the following: daily raw data, seven-day averages and thirty-day averages. This shall be submitted along with the permit to install application and:

(a) Be from the facility for which the treatment works is being designed, and be representative of the range of operating conditions that are expected to occur; or

(b) Be from a place of like kind, like usage, and located in a similar climate, and be representative of the range of operating conditions that are expected to occur.

[Comment: The NPDES regulations at paragraph (d) of 40 CFR 122.45 (effective July 1, 2011) require that all permit limits be expressed, unless impracticable, as both average-monthly limits (AMLs) and maximum-daily limits (MDLs) for all discharges other than publicly owned treatment works (POTWs), and as average weekly limits (AWLs) and AMLs for POTWs. The MDL is the highest allowable discharge measured during a calendar day or twenty-four-hour period representing a calendar day. The AML is the highest allowable value for the average of daily discharges obtained over a calendar month. The AWL is the highest allowable value for the average of daily discharges obtained over a calendar week.]

[Comment: "C.F.R" refers to the federal "Code of Federal Regulations," which can generally be found in public libraries and electronically online at www.gpo.gov/fdsys, and can be obtained by writing to: "Superintendent of Documents, PO Box 371954, Pittsburg, PA 15250-7954."]

Comment: To convert milligrams per liter to pounds per day the following formula can be used:

Pounds per day = [(concentration) x (flow) x (conversion factor)]

Pounds per day = [(mg/L) x (MGD) x (8.34)]

Note: MGD means the flow expressed in million gallons per day.

Table A-1 for design flow and waste strength requirements [g]

Place	Notes	Design flow (gallons per day)	Waste strength range BOD_5 (milligrams per liter)
Airport	b, i, j, p, r, t	15 per employee plus 4 per parking space	200 to 280 [r, s, t]
Apartment	b, l	120 per bedroom	200 to 280 [r, s, t]
Assembly hall	a, i, j	15 per employee plus 3 per seat without kitchen facilities or 7 per seat with kitchen facilities	200 to 280 [r, s, t]
Banquet hall	b i, j	15 per employee plus 3 per seat without kitchen facilities or 7 per seat with kitchen facilities	400
Barber shop	i, j	80 per basin	200 to 280 [s]
Beauty shop, styling salon	i, j	200 per basin	200 to 280 [s]
Bowling alley	a, i, j, p	75 per lane	200 to 280 [r, s, t]
Car wash	i, q	Sewer connection required; contact district office	
Campground or recreational park	a, i, j, m, n, p	30 per tent camp site without showers; 60 per tent camp site with showers; 60 per RV camp site without water hook-up; 90 per RV camp site with water hook-up	200 to 280 [r, s, t]
Church (less than 200 sanctuary seats)	a, h, j, k, o, p	3 per sanctuary seat without kitchen; 5 per sanctuary seat with kitchen	200 to 280 [r, s, t]
Church (greater than 200 sanctuary seats)	b h, j, k, o, p	5 per sanctuary seat without kitchen; 7 per sanctuary seat with kitchen	200 to 280 [r, s, t]
Coffee shop	a i, j	15 per employee plus 5 per seat	200 to 280 [r, s, t]
Convenience store, service station or gas station (add all flows that apply)	a, d, i, j, p, q	500 per pump island; 500 per service bay; 250 per shower; 15 per employee	200 to 280 [r, s, t, u]

Country club, sportsman club or gun club	b i, j, m, n, o, p	50 per member	200 to 280 [r, s, t]
Dance hall	a, i, j, p	15 per employee plus 3 per patron without kitchen facilities or 7 per patron with kitchen facilities	200 to 280 [r, s, t]
Daycare facility	a, i, j, p	35 per employee plus 10 per student	200 to 280 [r, s, t]
Dentist office	i	35 per employee plus 10 per patient plus 75 per dentist	200 to 280 [s]
Doctor office	i	35 per employee plus 10 per patient plus 75 per doctor	200 to 280 [s]
Dry cleaner	i	Contact district office [1]	200 to 280 [s]
Factory	i, q	25 per employee without showers; 35 per employee with showers	200 to 280 [r, s, t]
Food service operation/restaurant categories (as noted below)			
-Ordinary restaurant (not 24 hours)	c, i, j, p	35 per seat	400 to 600
-24 hour restaurant	c, i, j, p	60 per seat	400 to 600
-Restaurant along freeway	c, i, j, p	100 per seat	400 to 600
-Tavern (very little food service) or bar (full food service)	c, i, j, p	35 per seat	400 to 600
-Curb service (drive-in)	c, i, j, p	40 per car space	400 to 600
-Vending machine	c, i, j, p	100 per machine	400 to 600
*** End of food service operation/restaurant categories **********	*** End of food service operation/restaurant categories **********	*** End of food service operation/restaurant categories **********	*** End of food service operation/restaurant categories **********
Homes in subdivision	b, l	120 per bedroom	200 to 280 [r, s]
Hospital	b, i, j, p	300 per bed plus 35 per employee	200 to 280 [r, s, t]
Hotel or motel	a, i, j, p	100 per room	200 to 280 [r, s, t]
Institution (such as psychiatric hospitals or prisons)	b, i, j, p	100 per bed plus 35 per employee	300

Laundromat	i, q	15 per employee plus 400 per machine	200 to 280 [s]
Marina (restrooms and showers only)	a, i	20 per boat mooring or slip	200 to 280 [r, s, t]
Migrant labor camp	e, i, j, p	50 per employee	200 to 280 [r, s, t]
Mobile home park	b, i, j, p	300 per mobile home space	200 to 280 [r, s, t]
Nursing and rest homes	b, i, j, p	200 per bed plus 100 per resident employee plus 50 per non-resident employee	300
Office building	a, i, j, k	20 per employee	200 to 280 [r, s, t]
Playground or day park	a, i, k, p	15 per employee plus 12 per parking space	200 to 280 [s]
Retail store	a, i, j, p	15 per employee plus 12 per parking space	200 to 280 [r, s, t]
School	b, i, j, k, p, t	15 per employee plus 15 per pupil for elementary schools; 20 per pupil for junior and high schools; 85 per pupil for boarding schools	200 to 280 [r, s, t]
Service station or convenience store or gas station (add all flows that apply)	a, d,i, j, p, q, u, v	500 per pump island; 500 per service bay; 250 per shower; 15 per employee	200 to 280 [r, s, t, u]
Shopping center	a, f, l, p, q	15 per employee plus 2 per parking space without food service or 5 per parking space with food service	200 to 280 [r, s, t]
Swimming pool	a, i, m, n	5 per swimmer without hot showers or 10 per swimmer with hot showers	200 to 280 [r, s, t]
Theater	a, i, j, p	5 per seat for indoor auditorium or 10 per car for drive-in	200 to 280 [r, s, t]
Vacation cottage	b, i, j, p	50 per person without kitchen or 75 per person with kitchen	200 to 280 [r, s, t]
Veterinarian office and animal hospital	f, i, j	15 per employee plus 100 per doctor plus 20 per run and cage	200 to 280 [r, s, t]

Youth and recreation camps	b, i, j, p	15 per employee for day camp plus 15 per camper for day camp with food service or 10 per camper for day camp without food service; 50 per employee for overnight camp plus 50 per camper for overnight camp	200 to 280 [r, s, t]

Note a: Food service waste not included.

Note b: Food service waste included, but without garbage grinders.

Note c: Aeration tanks for these systems require forty-eight hour detention periods. Garbage grinders not permitted.

Note d: Truck parking areas will require consideration for treatment of runoff at large truck stops.

Note e: Twenty gallons per day of a vault latrine is used for toilet wastes.

Note f: Assume manual hosing of dog runs and solids (food droppings, etc.) removal prior to hosing.

Note g: Year round disinfection of all wastewater may be required before discharge to waters of the state or to any other surface or subsurface disposal systems.

Note h: Lower per seat estimate assumes a maximum of one church service per day, higher per seat estimate assumes a maximum of three church services per day. Weddings and funerals shall be counted as services.

Note i: Non-domestic or industrial wastes are prohibited from being discharged to soil based treatment systems.

Note j: Total capacity for number of persons should be confirmed by occupancy license or total occupancy capacity.

Note k: Higher flows shall be estimated when showers are available.

Note l: Deviating from this estimated design flow will require the director's approval, prior to applicant submitting the permit to install.

Note m: Pools cannot discharge pool filter backwash into soil based treatment systems.

Note n: Pool de-watering is prohibited from discharging to soil based treatment systems.

Note o: Flow estimates do not consider daycare facilities. If a daycare is present, the flow requirements for a daycare facility must be included.

Note p: An external grease trap is required for facilities with food service for soil based treatment systems.

Note q: Assume one working shift of not more than eight hours. Assume higher flows for two or three shift operations.

Note r: Assume no garbage grinder and normal domestic waste. If garbage grinders are present, the waste strength should be increased from twenty to sixty-five per cent.

Note s: Data for regular strength waste range of 200 to 280 milligrams per liter was obtained from U.S. EPA's manual "Onsite Wastewater Treatment Systems Manual, February 2002 (EPA/625/R-00/008)." This manual is available on the internet at www.epa.gov/ncepihom/ and can be ordered by telephone by calling (800) 490-9198.

Note t: Waste strength should be twenty to sixty-five per cent higher for facilities that include food service operations, such as cafeterias, service stations and for facilities that may handle pet wastes.

Note u: Sewer connection is required for a car wash. Please contact your district office.

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Prior Effective Dates: 11/1/2006

3745-42-06 **General permit to install requirements.**

(A) General permit to install coverage.

Without receiving an application for the general permit to install, the director may prepare and issue a general permit to install that covers the installation of any of the following, within a specific geographic area:

(1) Oil and water separators;

(2) Sewer extensions;

(3) Pump and treat systems for remediation of ground water;

(4) Cooling towers;

(5) Closed loop recycling systems;

(6) External fat, oil and grease interceptors; and

(7) Any other type of disposal system, in which the director determines that a general permit to install is an appropriate permitting mechanism.

(B) Criteria for issuing and renewing a general permit to install. The director may issue a general permit to install or renew a general permit to install if, on the basis of all information available to Ohio EPA, the director determines that:

(1) The installation of the disposal system will be protective of public health and the environment;

(2) The installation of the disposal system is more appropriately covered by a general permit to install than an individual permit to install;

(3) Technology or standards exist that make it reasonable to issue a general permit to install; and

(4) The criteria specified in rule 3745-42-04 of the Administrative Code are met.

(C) General permit to install coverage.

(1) Prohibition. No person is authorized to install a disposal system under the coverage of a general permit to install until the director issues the written notification that the disposal system has obtained coverage under a general permit to install.

(2) Notice of intent. Each person who wishes to obtain coverage under a general permit to install in order to install a disposal system shall submit to the director, or an authorized representative, a notice of intent to comply with the general permit to install, in accordance with the deadlines specified in the general permit to install. The director may require any person who has submitted a notice of intent to obtain coverage under an individual or alternative general permit to install. A notice of intent shall:

(a) Be submitted to the director, or an authorized representative, pursuant to Chapter 3745-42 of the Administrative Code;

(b) Be submitted with fees identical to those of an application for an individual permit to install;

(c) Be made only on forms deemed acceptable by the director or an authorized representative;

(d) Be signed, as specified in rule 3745-42-03 of the Administrative Code; and

(e) Contain:

(i) The general permit to install number under which authorization to construct is requested;

(ii) The name, address, telephone number, and title of the person requesting coverage under the general permit to install, as well as, if applicable, the name of an additional contact person;

(iii) Except for proposed mobile treatment units, the location of the disposal system, including the latitude and longitude of its approximate center, to the nearest five seconds. The latitude and longitude coordinates shall be provided as: degrees minutes seconds, using two digits in each space;

[Comment: When considering the components of a disposal system, the latitude and longitude of the approximate center of the treatment works or the point of connection to the sewerage system, to the nearest five seconds, should be used for the location. Latitude and longitude are available from USGS topographical maps, available at the following web link: http://mapping.usgs.gov.]

(iv) For mobile treatment units, a brief description of the unit and its intended use;

(v) If applicable, a description of the process generating the discharge, including:

(a) The four-digit standard industrial classification codes or the North America industry classification system (NAICS) that best represent the principle products or activities provided by the disposal system;

(b) Any existing quantitative data describing the concentration of pollutants in the discharge; and

(c) The volume to be discharged, if applicable;

(vi) A map showing the location of the disposal system and, if applicable, any point or points of discharge;

(vii) Detailed plans as specified by the general permit to install; and

(viii) Any other information deemed necessary by the director, or an authorized representative, as specified in the general permit to install.

(3) A general permit to install's coverage:

(a) Shall be effective for a fixed term not to exceed five years;

(b) Shall be automatically terminated unless construction is initiated within eighteen months after receiving notification from the director of coverage under the general permit to install;

(c) May only be extended once and only if the director receives a written request prior to the eighteen-month termination date. Extensions of coverage under the general permit to install shall not exceed twelve months; and

(d) May be transferred, pursuant to the requirements in paragraphs (H) to (H)(2) of rule 3745-42-02 of the Administrative Code.

(D) Administrative changes or modifications to a general permit to install.

(1) The director may make administrative changes to a general permit to install to correct typographical errors, to address new interpretations or recalculations or for other similar corrections with such changes not subject to the rules of procedures in Chapter 3745-47 of the Administrative Code.

(2) The director may modify a general permit to install.

(a) When a general permit to install is modified, only the conditions subject to modification are reopened.

(b) The director may issue a general permit to install modification:

(i) When Ohio EPA has received new information about the disposal system or the geographic area covered by the general permit to install that causes the director to conclude that the general permit to install should be modified. A general permit to install may be modified during their terms for this cause only if the information was not available to the director at the time of the general permit to install issuance; or

(ii) When standards, criteria or technology on which the general permit to install was based have been changed by new or amended statutes or standards or rules or regulations or judicial decisions enacted, adopted, promulgated or issued after the general permit to install was issued.

(E) Applicability of rules of procedure. A general permit to install shall be issued, modified, revoked or denied, or may be appealed, in accordance with the provisions of the rules of procedure of Ohio EPA, Chapter 3745-47 of the Administrative Code.

(F) Revocation or denial of general permit to install coverage.

(1) The director may revoke or deny a general permit to install's coverage or individual coverage under a general permit to install during its term for cause including, but not limited to, the criteria have not been met, or a determination that any applicable law, rule, regulation, or permit term or condition has been violated.

(2) For any revocation or denial of permit to install coverage, the permittee may request a hearing before the director, in accordance with the provisions of the rules of procedure within Chapter 3745-47 of the Administrative Code.

[Comment: Revocations and denials are initially issued as proposed actions, which may be adjudicated, and then as final actions, which may be appealed.]

(G) Individual or alternative general permit to install requirements. The director may require any person who has requested or obtained coverage under a general permit to install to apply for and obtain:

(1) An individual permit to install. Circumstances where the director may require an individual permit to install include, but are not limited to, when:

(a) The proposed disposal system may have a potential to impact environmentally sensitive areas, such as highly susceptible ground water containment areas or wetlands;

(b) The proposed disposal system does not meet the eligibility requirements contained in the general permit to install;

(c) The applicant has a documented history of noncompliance with laws, rules, or permit requirements pertaining to surface or ground waters, within five years previous to the receipt of the application. A history of noncompliance includes, but is not limited to, documented unsanitary conditions or issuance of finding and orders; and

(d) The director has revoked the general permit or individual coverage under a general permit pursuant to Chapter 3745-42 of the Administrative Code; or

(2) An alternative general permit. Circumstances where the director may require alternative general permit coverage include, but are not limited to, when:

(a) An alternative general permit has been issued for a specific geographic area of the state;

(b) An alternative general permit has been issued for a specific category of a disposal system or dischargers;

(c) The proposed disposal system does not meet the eligibility requirements contained in the general permit, or other conditions or specifications contained in the general permit; and

(d) The director has revoked the general permit or individual coverage under a general permit pursuant to Chapter 3745-42 of the Administrative Code.

Replaces: 3745-42-06

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3745-42-08 **Isolation distance requirements.**

(A) Isolation distances. Except as provided in paragraphs (B) to (E) of this rule, the minimum isolation distances in table A-1 of this rule shall be maintained.

[Comment: Isolation distances. In the case of any reference to any building, the measurement shall 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 shall 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 an earthen lagoon or storage facility, the measurement shall be taken from the outer bank or the toe of the earthen impoundment.]

-Table A-1: Isolation distance requirements.-

Component of disposal system	Minimum isolation distance required from an occupied building	Minimum isolation distance required from surface waters of the state
Earthen impoundment that contains sewage or treated sewage	Three hundred feet	Three hundred feet
Earthen impoundment that contains industrial waste, other than industrial waste generated from the recovery of any natural resource, such as a quarry mining operation	Three hundred feet	Three hundred feet
Sewage sludge drying bed	Three hundred feet	Three hundred feet
Covered sand filter	One hundred fifty feet	Three hundred feet
Housing or building enclosure for extended aeration treatment works	One hundred fifty feet	One hundred fifty feet
Pump station	Fifty feet	Thirty-five feet
Any other component of a treatment works, not including (1) a disposal field, (2) a land application area or (3) a wet weather management facility for treating combined sewer overflows or sanitary sewer overflows	Two hundred feet	Three hundred feet

(B) After considering either the potential impacts to neighboring buildings or prevailing wind directions, the director may increase an isolation distance set forth in table A-1

of this rule or require mitigative measures such as additional freeboard, landscape mounds, fencing, trees or other means to reduce the impacts:

[Comment: Potential impacts to neighboring buildings could include odors or the probability that either an overflow or a breach could inundate neighboring buildings, causing harm to life, health or property. Applicants proposing to construct above ground impoundments should also contact the Ohio department of natural resources division of dam safety. Their web page is: http://www.dnr.state.oh.us/dsafety/default/tabid/3329/Default.aspx .]

(1) Within a permit, including but not limited to a general permit to install or a storm water permit. Where a greater isolation distance requirement exists as a condition of a permit, the greater isolation distance requirement shall prevail; or

(2) To protect the following from potential impacts from a wastewater treatment works with a design flow of more than one hundred thousand gallons per day or from any non-aerated treatment lagoon:

(a) A high density development;

[Comment: A high density development includes a residential development of homes or condominiums, a commercial development, such as a shopping mall, or a business park development.]

(b) A day care facility;

(c) A hospital; or

(d) Waters of the state.

(C) For the construction of any new disposal system after the effective date of this rule, the director may reduce any minimum isolation distance in table A-1 of this rule if:

(1) For any request to reduce an isolation distance from an occupied building, the applicant can demonstrate to the director:

(a) That by taking into account prevailing wind directions, screening, or other means of noise and odor control, that any component of a disposal system will not negatively impact a neighboring building, public health or the environment; and

(b) That the general public that is located within the disposal system service area has been notified of the proposed reduced isolation distances and has been given an opportunity to view the proposal and comment. All comments shall be forwarded to the director or an authorized representative for their consideration; or

(2) For any request to reduce an isolation distance from waters of the state, the applicant can demonstrate to the director:

(a) That there is a technical or financial hardship in implementing a minimum isolation distance;

(b) That there are no other viable options; and

(c) That the general public that is located within the disposal system service area has been notified of the proposed reduced isolation distances and has been given an opportunity to view the proposal and comment. All comments shall be forwarded to the director or an authorized representative for their consideration.

(D) For any disposal system constructed prior to the effective date of this rule and proposed to be modified after the effective date of this rule, smaller isolation distances will be allowed, provided the applicant provides documentation that meeting the isolation distances in paragraphs (A) and (B) of this rule would impede the function of the existing disposal system or cause the applicant to incur more cost. To protect public health or the environment from a significant threat, the director may require other mitigative measures, such as additional freeboard, landscape mounds, fencing, trees or other means to reduce the impacts when smaller isolation distances are allowed.

(E) For any disposal system constructed prior to the effective date of this rule, to protect public health or the environment, the director may require other mitigative measures when isolation distances smaller than those listed in table A-1 of this rule exist. For example, mitigative measures could be required as a result of documented odor complaints or a breach or overflow that caused harm to life, health or property.

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3745-42-11 **Holding tanks.**

(A) Purpose. The purpose of this rule is to establish the permit to install application requirements, management plan application requirements, design standards, siting restrictions and operation and maintenance requirements for any holding tank. This rule contains the following additional paragraphs:

(1) Paragraph (B): exclusions from this rule;

(2) Paragraph (C): prohibitions and restrictions;

(3) Paragraph (D): permit to install exemptions;

(4) Paragraph (E): general requirements: permits to install, holding tanks that contain industrial waste and management plans;

(5) Paragraph (F): design requirements for a holding tank that will contain sewage or industrial waste;

(6) Paragraph (G): holding tank management plan requirements for a sewage holding tank;

(7) Paragraph (H): record keeping requirements for any holding tank;

(8) Paragraph (I): holding tank decommissioning requirements; and

(9) Paragraph (J): compliance, enforcement and oversight.

(B) Exclusions from this rule. This rule does not apply to, and no permit to install or management plan is required for:

(1) Any portable toilet that does not have a connection to a water supply; or

(2) A portable unit for the storage of sewage that:

(a) Is dropped off and picked up for off-site recycling, treatment or disposal, including but not limited to "totes" or "roll-offs"; and

(b) Has a total sewage storage volume of five hundred gallons or less;

[Comment: Some portable units include individual storage tanks for the discharge from sinks and the discharge from toilets. The total additive volume of both tanks shall not exceed five hundred gallons.]

(3) A holding tank that is regulated by rules 3745-55-90 to 3745-55-99 of the Administrative Code or rules 3745-66-90 to 3745-66-101 of the Administrative Code; or

(4) A holding tank that is an underground storage tank and is regulated by rule 1301:7-9-06 of the Administrative Code.

(C) Prohibitions and restrictions.

(1) Replacement sewage holding tank for existing onsite sewage disposal system prohibition. Except as provided in paragraphs (C)(3) to (C)(4)(c)(iii) of this rule, no replacement sewage holding tank shall be installed to replace an existing onsite sewage disposal system:

(a) Except when the existing onsite sewage disposal system has resulted in a nuisance, a human health risk or a risk to the environment and centralized sewers are not available and there is no other viable treatment alternative for the site; or

(b) Except when the existing onsite sewage disposal system has resulted in an un-permitted discharge to waters of the state and centralized sewers are not available and there is no other viable treatment alternative for the site.

(2) New sewage holding tank prohibition. Except as provided in paragraphs (C)(2)(a) to (C)(2)(c) of this rule and paragraphs (C)(3) to (C)(4)(c)(iii) of this rule, no new sewage holding tank shall be installed to serve a building that is currently not served by a disposal system unless:

(a) Sanitary sewers are currently unavailable and inaccessible, but they are under construction or a contract for construction has been signed at the time the permit to install application is received by the director or an authorized representative;

(b) Sewers will be available within twelve months of the date the permit to install application was received; and

(c) The building will be connected to sanitary sewers within twelve months of the date the permit to install application was received.

(3) The director may allow a sewage holding tank, provided it is located within a recreational vehicle park, a recreation camp, a combined park-camp, or a temporary park-camp for which Ohio EPA shall adopt rules under section 6111.46 of the Revised Code and is designed in accordance with this rule.

[Comment: The definitions for "recreational vehicle park", a "recreation camp", a "combined park-camp", and a "temporary park-camp" can be found in Chapter 3701-26 of the Administrative Code.]

(4) The director may allow a sewage holding tank, when the sewage holding tank is designed in accordance with this rule and:

(a) Will be utilized as a vault privy and not connected to a water supply;

(b) Will be used for not more than one occurrence of less than twenty-one consecutive days in any calendar year; or

(c) Will be used to serve a temporary construction trailer, provided the temporary construction trailer:

(i) Will be used solely for business purposes;

(ii) Will not be used as a residence; and

(iii) Will be removed from service and decommissioned in accordance with paragraphs (I) to (I)(3)(d) of this rule.

(D) Permit to install exemptions. No permit to install is required for the modification of a holding tank, when the modification will:

[Comment: Regardless of a permit to install exemption, the director may require a holding tank management plan, in accordance with paragraphs (G)(3) to (G)(3)(b)(iii) of this rule.]

(1) Replace a holding tank's equipment or parts with like equipment or like parts; or

(2) Make minor repairs or minor modifications, as determined by the director or an authorized representative, that do not change the overall capacity, operation or maintenance of the holding tank.

(E) General requirements: permits to install, holding tanks that contain industrial waste and management plans.

(1) Permit to install requirements.

(a) Except as provided in paragraphs (B) to (B)(4) of this rule and paragraphs (D) to (D)(2) of this rule, no person shall cause, permit or allow the installation or modification of a holding tank without first obtaining a permit to install from the director.

(b) For any holding tank to be used as a replacement for an existing sewage disposal system, the applicant shall demonstrate to the director's satisfaction that connecting to a sanitary sewer or constructing an onsite sewage disposal system is not feasible. At a minimum, the applicant shall submit the following information to the director or an authorized representative for consideration and determination:

(i) A cost comparison of disposal system alternatives that includes the installation and annual operating costs for:

(a) A holding tank;

(b) Connecting to sanitary sewers; and

(c) At least two other onsite disposal system alternatives;

(ii) Demonstration that the cost of connecting to sewers or installing and operating the onsite alternatives is not affordable;

(iii) A letter from the local sewer authority, locating the nearest sanitary sewer;

(iv) A site plan for the lot where the holding tank is being proposed, showing the size and location of any building and the size and location of any proposed holding tank;

(v) Demonstration that a sewage disposal system is required for the building because the state or local plumbing code requires that restrooms or running water be provided for the building;

(vi) Whether the building that the holding tank will serve is proposed or existing;

(vii) A narrative description of the operations, including;

(a) The number of employees or occupants that will generate sewage;

(b) The average daily flow estimate and the peak daily flow estimate of sewage to be generated at the facility over the course of a week;

(c) The types of wastewater generated; and

(d) Whether the operations will be seasonal or year-round;

(viii) A site specific soil evaluation that includes a site specific soil map that locates, as necessary, any soil probes, any soil delineations, any soil

pits or any soil borings. In addition to the information in the general soil survey, the location of any soil delineations and the location and number of soil probes, pits or borings necessary to describe the soil conditions shall be determined by a professional soil scientist for the site. The soil delineations, soil probes, soil pits or soil borings shall:

(a) Be performed or evaluated by a professional soil scientist;

(b) Be taken prior to any construction activities; and

(c) Be done to a minimum depth of thirty inches below natural grade. To protect public health or the environment, the director or authorized representative may require deeper soil probes, soil pits or soil borings. In areas where glacial till and fractured bedrock substratum soils are in close proximity, the soil investigation shall be done to a depth of at least fifty inches or until bedrock is encountered.

[Comment: The Ohio department of natural resources division of soil and water conservation web site provides additional information regarding a site's specific soils: http://www.dnr.state.oh.us/tabid/9051/default.aspx. To locate a professional soil scientist in your area, you can visit the association of Ohio pedoligists web link at http://www.ohiopedologist.org/.]

(2) General requirements for holding tanks that contain industrial waste.

(a) Except as provided in paragraphs (E)(2)(b) to (E)(2)(b)(ii) of this rule, for any holding tank that will contain industrial waste, the proposed holding tank shall be used exclusively to collect, hold or store industrial waste.

(b) The director may allow a holding tank to collect, hold or store both industrial waste and sewage provided:

(i) The maximum daily flow of sewage flow into the holding tank does not exceed twenty-five gallons per day; and

(ii) The holding tank is designed as if it contains solely industrial waste, in accordance with this rule.

(3) General requirements for a sewage holding tank management plan.

(a) For any sewage holding tank installed after the effective date of this rule, no person shall cause, permit or allow the operation of a holding tank without first obtaining a holding tank management plan in accordance with paragraphs (G) to (G)(3)(b)(iii) of this rule.

(b) Fees. The fee for a holding management plan application is as follows.

[Comment: Information regarding Ohio EPA fees can be found in section 3745.11 of the Revised Code.]

(i) When a holding tank management plan is part of the permit to install application, the only application fee required is the permit to install application fee. No separate application fee or director's action is required for a holding tank management plan.

(ii) When any holding tank management plan is submitted in the absence of a permit to install, such as a renewal or as a result of noncompliance in accordance with paragraphs (J) to (J)(3) of this rule, the holding tank management plan application fee shall apply.

(iii) When a holding tank management plan application is submitted as a termination of the holding tank management plan, no fee is required.

(F) Design requirements for a holding tank that will contain sewage or industrial waste.

(1) For any in-ground or partially in-ground holding tank, an applicant shall, at a minimum, incorporate the following into their applications and into their design and operation of the holding tank and related equipment:

(a) The inner surface or the lining of the holding tank shall be compatible with the sewage or industrial waste that the tank is proposed to hold;

(b) The holding tank shall not leak from its sides, bottom, seams or top;

(c) The holding tank shall meet or exceed H 20 loading if the tank is completely below ground;

(d) The holding tank foundation shall be capable of supporting the holding tank when the tank is full of sewage or industrial waste and shall be capable of preventing uplift of the tank when the tank is empty;

(e) The holding tank shall be designed and constructed without storm water connections and to prevent inflow and infiltration from entering the holding tank;

(f) For any holding tank connected to a water supply, the tank shall be equipped with the following features:

(i) A liquid level device that is connected to an autodialer and a light alarm system located in a staffed location where, to the greatest extent

practicable, the alarm will be heard by employees present on site, or an audio/visual alarm located in a visible location above ground at the tank's site. The alarm system shall be activated when the level of sewage or industrial waste reaches seventy-five per cent of the holding tank capacity and the alarm signal shall be transmitted to a staffed location or clearly visible to a staffed location; and

(ii) Odor control measures, if necessary, to prevent nuisance conditions;

(g) The tank shall be labeled, or a legible sign shall be placed immediately adjacent to the holding tank, with the words "Non-Hazardous Sewage" or "Non-Hazardous Industrial Waste," whichever term applies to the tank in question;

(h) Signs that direct persons to notify the Ohio environmental protection agency's spill hotline (1-800-282-9378) in an event of a release shall be placed in clearly visible locations around the tank;

(i) The application shall include an operation and maintenance plan that, at a minimum, contains all of the following:

(i) A schedule for emptying the waste from the tank and hauling the waste for recycling, treatment or disposal;

(ii) Measures for spill control;

(iii) Standard operating procedures for filling, operating, and emptying the tank; and

(iv) As applicable, a plan for the operation and maintenance of the equipment required in paragraphs (F)(1)(f) to (F)(1)(f)(ii) of this rule; and

(j) For any in-ground or partially in-ground holding tank that is designed to contain, store or hold sewage, the holding tank shall meet the following limitations:

(i) Unless otherwise determined by the director, the maximum allowable design flow into the tank shall not exceed six hundred gallons per day;

(ii) The design of the tank shall provide for a minimum storage capacity of ten times the daily design flow; and

(iii) The tank volume shall be greater than or equal to one thousand gallons and less than or equal to seven thousand five hundred gallons.

(2) For any above-ground holding tank, an applicant shall, at a minimum, incorporate the following into their applications and into their design and operation of the holding tank and related equipment:

(a) The inner surface or the lining of the holding tank shall be compatible with the sewage or industrial waste that it is holding;

(b) The holding tank shall be equipped with the following features:

(i) For a remotely or automatically filled holding tank, a liquid level device connected to an autodialer and a light alarm system located in a staffed location, or a liquid level device connected to an audio/visual alarm located in a visible location above ground at the tank's location. The alarm system shall be activated when the level of sewage or industrial waste reaches seventy-five per cent of the holding tank capacity and the alarm signal shall be transmitted to a staffed location or clearly visible to a staffed location;

(ii) For a manually filled holding tank, a visual or sight glass type of level measurement; and

(iii) Odor control measures, if necessary, to prevent nuisance conditions;

(c) The tank shall be labeled, or a legible sign shall be placed immediately adjacent to the holding tank, with the words "Non-Hazardous Sewage" or "Non-Hazardous Industrial Waste," whichever term applies to the tank in question;

(d) Signs that direct persons to notify the Ohio environmental protection agency's spill hotline (1-800-282-9378) in an event of a release shall be placed in clearly visible locations around the tank;

(e) The application shall include an operation and maintenance plan that, at a minimum, contains all of the following:

(i) A schedule for emptying the waste from the tank and hauling the waste to off-site recycling, treatment or disposal;

(ii) Measures for spill control;

(iii) Standard operating procedures for filling, operating, and emptying the tank; and

(iv) As applicable, a plan for the operation and maintenance of the equipment required in paragraphs (F)(2)(b) to (F)(2)(b)(iii) of this rule; and

(f) In addition, above-ground holding tanks that are designed to contain, store or hold sewage shall meet the following limitations:

(i) Unless otherwise determined by the director, the maximum allowable design flow into the tank shall not exceed six hundred gallons per day;

(ii) The design of the tank shall provide for a minimum storage capacity of ten times the daily design flow; and

(iii) The tank volume shall be greater than or equal to one thousand gallons and less than or equal to seven thousand five hundred gallons.

(3) Except as provided in paragraphs (F)(3)(d) to (F)(3)(d)(ii) of this rule, secondary containment, as described in this rule, shall be provided for above-ground, in-ground or partially in-ground holding tanks that contain, store or hold industrial waste. Secondary containment is not required for above-ground, in-ground or partially in-ground tanks that only contain, store or hold sewage unless the director or an authorized representative determines that secondary containment for such tanks is needed to protect human health or the environment.

(a) The secondary containment system shall be designed, installed, and operated to prevent any migration of waste from the tank to the soil, ground water, or surface water. The secondary containment system shall be capable of detecting the release of any waste from the tank, and collecting such released waste until the collected waste is removed.

(b) Secondary containment system for holding tank containing industrial waste shall be, at a minimum:

(i) Constructed of or lined with materials that are compatible with the wastes to be placed in the holding tank and have sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which they may be exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from nearby vehicular traffic);

(ii) Placed on a foundation or base capable of supporting the secondary containment system and resisting pressure gradients above and below the system and capable of preventing failure due to settlement, compression, or for any in-ground or partially in-ground holding tank, preventing failure due to uplift;

(iii) Equipped with leak detection systems that are designed and operated to detect the failure of either the holding tank or the secondary

containment structures or any release of industrial waste or accumulated waste in the secondary containment system within twenty-four hours of the leak, or at the earliest practicable time if the existing detection technology or site conditions will not allow detection of a release within twenty-four hours; and

(iv) Sloped or otherwise designed to drain and facilitate removal of waste resulting from leaks, spills, or precipitation. Spilled or leaked waste and accumulated precipitation shall be removed from the secondary containment system within twenty-four hours of becoming aware of the spill or leak, or as soon as possible to prevent harm to human health or the environment, if removal of the released waste or accumulated precipitation cannot be accomplished within twenty-four hours.

(c) Secondary containment for holding tanks containing industrial waste shall include one or more of the following devices:

(i) A liner (external to the tank);

(ii) A vault;

(iii) A double-walled tank; or

(iv) An equivalent device as approved by the director.

(d) Secondary containment for holding tanks as specified in this rule is not required if the following criteria are met:

(i) The industrial waste only contains a contaminant listed in table 1 of rule 3745-51-24 of the Administrative Code in concentrations fifty per cent or less of the regulatory level listed for that contaminant in table 1 of rule 3745-51-24 of the Administrative Code; and

(ii) The pH of the industrial waste will be greater than five standard units and less than twelve standard units.

(G) Holding tank management plan requirements for a sewage holding tank.

(1) The director may deny any sewage holding tank management plan application not in compliance with this chapter and require the submittal of a new management plan application, including all applicable fees, to be submitted to the director or an authorized representative, in accordance with the director's notification.

(2) For any sewage holding tank installed after the effective date of this rule and except as provided in paragraphs (B) to (B)(4) and paragraphs (G)(3) to

(G)(3)(b)(iii) of this rule, no person shall install or operate a sewage holding tank without first obtaining a holding tank management plan approval from the director. A holding tank management plan:

(a) Approval is effective for up to five years, starting from the date it was approved by the director. A renewal holding tank management plan shall be submitted to Ohio EPA at least six months prior to expiration of any existing holding tank management plan.

(i) If a person submits a renewal holding tank management plan six months prior to expiration of the existing plan and Ohio EPA has not approved the new holding tank management plan prior to the expiration of the existing holding tank management plan, the existing holding tank management plan shall be effective until the new holding tank management plan is acted upon by the director.

(ii) If a person does not submit a new holding tank management plan six months prior to expiration of the existing plan, the existing holding tank management plan will expire at the end of the five years;

(b) Application shall be on forms approved by the director; and

(c) Application shall be in narrative form and shall include:

(i) The physical location of the holding tank, including the street address, the city or village, the zip code, the county and the township;

(ii) The dimensions of the holding tank;

(iii) The volume of the holding tank;

(iv) The maximum number of employees or inhabitants the holding tank will serve on a daily basis;

(v) The name of the licensed hauler who will haul the holding tank waste;

(vi) A detailed description of the method or methods used for the handling, storage and disposal of the holding tank contents, including:

(a) Information on how sewage spills or runoff will be prevented or contained during pump outs;

(b) A copy of the contract with a local hauler, who will haul the holding tank contents, including the cost for the hauler to haul the waste; and

(c) As applicable, confirmation that the hauler is licensed through a local health department to haul wastes; and

(vii) The name and address of the receiving facility permitted by the applicable regulatory authority and documentation from the receiving facility that it is willing to receive the sewage from each hauling event.

(3) For any sewage holding tank installed prior to the effective date of this rule:

(a) The sewage holding tank shall be protective of public health and the environment.

(b) The director may require any person that operates or owns a sewage holding tank to submit a holding tank management plan in accordance with the director's notification and paragraphs (G)(2) to (G)(2)(c)(vii) of this rule, where the director or an authorized representative:

[Comment: Fulfilling the requirement for a management plan does not preclude the director from pursuing enforcement action for situations where a holding tank has been installed without a permit to install.]

(i) Has determined that a risk to human health or the environment exists;

(ii) Has determined that the holding tank was installed without a permit to install; or

(iii) Has determined that a holding tank is serving a purpose for which it was not originally designed and permitted.

(H) Record keeping requirements for any holding tank. Any person who owns or operates a holding tank shall keep the following records at the facility for the time specified and make these records available to the director, or an authorized representative, within a reasonable time upon request:

(1) Holding tank construction and installation records, including a copy of the approved permit to install, until the holding tank is decommissioned in accordance with paragraphs (I) to (I)(3)(d) of this rule;

(2) If applicable, a copy of the effective holding tank management plan;

(3) Operating records for holding tanks for a period of three years. The records shall include, at a minimum:

(a) Each date that the sewage or industrial waste was hauled;

(b) The volume and description of each source of sewage or industrial waste;

(c) The name and address of the receiving facility;

(d) The name of the hauler and confirmation that the hauler is licensed through a local health department to haul wastes; and

(e) As applicable, documentation from the receiving facility that it has received the sewage or industrial waste from each hauling event.

(I) Holding tank decommissioning requirements.

(1) For any above-ground holding tank, the owner or operator of the tank shall:

(a) Pump and haul the entire contents of the tank for recycling, treatment or disposal at a facility that has been permitted by the applicable regulatory authority; and

(b) Clean the holding tank and appurtenant areas, as necessary.

(2) For any in-ground or partially in-ground holding tank, the owner or operator of the tank shall:

(a) Pump and haul the entire contents of the tank for recycling, treatment or disposal at a facility that has been permitted by the applicable regulatory authority;

(b) Clean the holding tank and related areas as necessary; and

(c) Decommission the in-ground or partially in-ground holding tank with one of the following options:

(i) Remove the holding tank from the ground; or

(ii) Fill the holding tank with clean sand, soil, or other inert material; or

(iii) Permanently change the function of the holding tank pursuant to the permit to install application requirements of this rule.

(3) The owner or operator of the holding tank shall notify the director or an authorized representative of the following within thirty days of the holding tank decommissioning:

(a) The name and address of the facility where the holding tank is located, the name of the owner and the name of the operator;

(b) The date the holding tank was decommissioned;

(c) The most recent date the sewage or industrial waste was pumped and hauled, as specified in paragraph (H)(3)(a) of this rule; and

(d) A brief description of how the holding tank was decommissioned.

(J) Compliance, enforcement and oversight.

(1) A holding tank shall be designed, operated and maintained in accordance with this rule.

(2) The director may deny any holding tank permit to install or management plan application not in compliance with this rule and require the submittal of a new permit to install or management plan application, including all applicable fees, to be submitted to Ohio EPA within thirty days of the final action.

(3) The director may revoke any holding tank management plan not in compliance with this rule.

Replaces: 3745-42-11

Effective: 9/1/2009

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Promulgated Under: 119.03
Statutory Authority: 6111.03
Rule Amplifies: 6111.03, 6111.44, 6111.45, 6111.46
Prior Effective Dates: 12/1/2005

3745-42-13 Land application systems.

(A) Definitions: as used in this rule.

(1) "Aquifer system" means one or more geologic units or formations that are wholly or partly saturated with water and are able to store, transmit and yield significant amounts of water to wells or springs.

(2) "ASTM D698" means the American society for testing and material (ASTM) standard test methods for laboratory compaction characteristics of soil using standard effort, as that standard was approved on June 10, 2000.

(3) "ASTM D2487" means the American society for testing and material (ASTM) standard practice for classification of soils for engineering purposes, as that standard was approved on March 10, 2000.

(4) "At-grade system" means an onsite disposal system, where treated sewage is conveyed to a dispersal field that is constructed on or above in situ soil and covered by soil.

(5) "$CBOD_5$" or "five-day carbonaceous biochemical oxygen demand" has the same meaning as defined in 40 C.F.R.136 (effective July 1, 2006).

(6) "Class A treated sewage" means treated sewage treated in accordance with table K-2 of this rule.

(7) "Class B treated sewage" means treated sewage treated in accordance with table K-3 of this rule.

(8) "Class C treated sewage" means treated sewage treated in accordance with table K-4 of this rule.

(9) "Controlled discharge" means an NPDES permitted discharge that can occur when certain stream conditions exist or when land application can not occur.

(10) "Dense glacial till" means tills that impede the movement of treated water away from the site and cause the formation of perched saturated conditions in the soil profile, especially with the addition of wastewater.

(11) "Design flow" means the average daily flow to the treatment works.

(12) "Discharging land application system" means a land application system that:

(a) Regardless of whether a land application contract allows isolation distance requirements to be waived, does not meet the isolation distance requirements in this rule;

(b) Proposes to land apply on sites where drain tiles are, or will be, less than two vertical feet below final grade;

(c) Proposes to land apply on frozen or snow covered ground;

(d) Proposes to land apply during precipitation events; or

(e) Proposes a point source discharge to waters of the state.

(13) "Disposal system" means disposal system, as defined in section 6111.01 of the Revised Code.

(14) "Drinking water source protection area for a public water system using ground water" means the surface and subsurface area surrounding a public water supply well(s) that will provide water to the well(s) within five years as delineated or endorsed by the Ohio EPA under the wellhead protection program and the source water assessment and protection program

(15) "Emergency management zone" or "EMZ" means the surface and subsurface area in the immediate vicinity of a public water system intake as delineated or endorsed by the Ohio EPA under the source water assessment and protection program within which the public water supply owner or operator has little or no time to respond to potential contamination from a spill, release, or weather-related event. The standard emergency management zone boundary consists of a semi-circle that extends five hundred feet upstream of the intake and one hundred feet downstream of the intake, except as modified due to local conditions.

(16) "EPA" means environmental protection agency.

(17) "Hydraulic balance" means an accounting of the hydraulic inputs and outputs of a land application system.

(18) "Inner management zone" means the surface and subsurface area within a drinking water source protection area for a public water system using ground water surrounding a public water supply well(s) that will provide water to the well(s) within one year as delineated or endorsed by the Ohio EPA under the wellhead protection program and the source water assessment and protection program.

(19) "Karst" means a terrain with an assemblage of landforms such as sinkholes and caves that are due to weathering of predominantly carbonate bedrock.

(20) "Lagoon" means any earthen or partially earthen impoundment that is used for the treatment of sewage.

(21) "Land application" means evenly spreading or spraying treated sewage onto the surface of the land for final treatment or disposal.

(22) "Land application area" means the site or location where treated sewage is applied to the ground surface for treatment or disposal.

(23) "Land application contract" means a deed showing ownership, or a contract or agreement that describes the land where treated sewage will be applied and that allows treated sewage to be land applied.

(24) "Land application management plan" means a management plan governing the operation, maintenance, effluent limits, and monitoring requirements of a land application system.

(25) "Land application system" means a disposal system that uses land application, thereby minimizing or eliminating the discharge of treated sewage to waters of the state.

(26) "Low permeability" means a permeability of less than two tenths of one inch per hour.

(27) "Normal ground water table" means the shallowest depth of soil which is saturated with water for an extended or permanent time period.

(28) "NPDES" means national pollutant discharge elimination system.

(29) "Operator" means the person in responsible charge of operating and maintaining the disposal system in compliance with the NPDES permit or land application management plan. The operator may or may not be the owner of the disposal system.

(30) "Person" means person, as defined in section 6111.01 of the Revised Code.

(31) "Professional soil scientist" means an individual with a baccalaureate degree with a major in agronomy, soils, or a closely allied field of principles of pedology to soil classification, investigation, education, and consultation and on the effect of measured, observed and inferred soil properties and their use, and who is a member of the Ohio association of pedologists or the American registry of certified professionals in agronomy in crops and soil (ARCPACS).

[Comment: A list of the professional soil scientists in Ohio can be obtained from the association of Ohio pedologists web site. The web link for this site is: http://www.ohiopedologist.org/.]

(32) "Public water system" has the same meaning as defined in rule 3745-81-01 of the Administrative Code.

(33) "Publicly owned sanitary sewers" means any centralized sewerage system other than those that are owned by a private or semi-public entity.

(34) "Restricted access site" means a site on which treated sewage may be placed with a limited probability that the public will come into contact with the treated sewage. Such sites include, but are not limited to, agricultural crop fields (i.e., nonhuman food crops), and fenced-off meadows, pastures, woodlands, landscaping areas and other private property.

(35) "Septage" means either liquid or solid material removed from any septic tank, holding tank, cesspool, portable toilet, type III marine sanitation device, or similar treatment works.

(36) "Sewage" means sewage, as defined in section 6111.01 of the Revised Code.

(37) "Sewerage system" means sewerage system, as defined in section 6111.01 of the Revised Code.

(38) "Significant zone of saturation" means a zone of saturation that may act as a preferential pathway of migration away from the limits of storage or application of treated sewage.

(39) "Soil absorption system" means the final treatment component of an onsite sewage treatment system that utilizes absorption and adsorption to treat and disperse the treated sewage into subsurface soils.

(40) "Source water assessment and protection program" means Ohio EPA's program based on the Safe Drinking Water Act, 42 U.S.C. 300 (f), as amended in 1996, and approved by U.S. EPA, November, 1999.

(41) "Storage facility" means the part of a treatment works, such as an earthen or man-made impoundment, that is used solely for the storage of treated sewage.

(42) "Surface waters of the state" means surface waters of the state, as defined in rule 3745-1-02 of the Administrative Code.

(43) "Total inorganic nitrogen" means the sum of nitrite-nitrogen, nitrate-nitrogen and ammonia-nitrogen.

(44) "Total maximum daily load" means total maximum daily load, as defined in rule 3745-2-02 of the Administrative Code.

(45) "Treated sewage" means sewage treated by a treatment works.

(46) "Treatment works" means treatment works, as defined in section 6111.01 of the Revised Code.

(47) "UIC class V injection well" means underground injection control (UIC) class V injection well as defined in paragraph (E) of rule 3745-34-04 of the Administrative Code.

(48) "Unrestricted access site" means a site on which treated sewage may be placed with a high potential for the public to come into contact with the treated sewage. Such sites include, but are not limited to, golf courses, parks, lawns and playing fields.

(49) "Waters of the state" means waters of the state, as defined in section 6111.01 of the Revised Code.

(50) "Wellhead protection program" means Ohio EPA's program based on the Safe Drinking Water Act, 42 U.S.C. 300 (f), as amended in 1986, and approved by U.S. EPA, November 1992.

[Comment: Federal regulations ("Code of Federal Regulations" or "C.F.R."). Information and copies may be obtained by writing to: "Superintendent of Documents, PO Box 371954, Pittsburgh, PA 15250-7954." The full text is also available in electronic format at http://www.gpoaccess.gov/cfr/index.html. Compilations are also available for inspection and copying at the state library of Ohio and most public libraries.]

(B) Land application systems: purpose and exclusions.

(1) Purpose. The purpose of this rule is to establish permit application requirements, design standards, siting restrictions, operation and maintenance requirements and water quality and monitoring frequency requirements for land application systems as part of the director's supervision of the installation and operation and maintenance of this type of sewage disposal system. The director may waive any requirement in paragraph (H), paragraph (L) or paragraph (M) of this rule for any land application system where the treatment works is designed for less than one thousand gallons per day.

(2) Exclusions. This rule does not apply to:

(a) Soil absorption systems. Examples of soil absorption systems are:

(i) Conventional leach fields;

(ii) Mound systems;

(iii) Below grade low pressure pipe distribution systems, including drip distribution systems; and

(iv) At-grade gravity leach field dispersal systems;

(b) The land application of domestic, commercial or industrial septage;

(c) The land application of industrial waste; or

(d) The land application of grease from an internal grease trap or an external grease interceptor.

(C) Land application systems: prohibitions and restrictions.

(1) The land application of sewage is prohibited.

(2) No person shall land apply treated sewage:

(a) To natural wetlands or to constructed wetlands, unless approved by Ohio EPA. The director may require an isolation distance from natural or constructed wetlands to protect public health or the environment;

(b) Within the ten-year floodplain. The director may prohibit the land application of treated sewage beyond the ten-year flood plain in order to protect public health or the environment;

(c) During a precipitation event, unless permitted by an NPDES permit;

(d) On snow covered ground, unless permitted by an NPDES permit;

(e) On frozen ground, unless permitted by an NPDES permit;

(f) Using any form of spray distribution when the instantaneous wind speed exceeds twenty miles per hour;

(g) To areas where a UIC class V injection well is present or within an area that could affect a UIC class V injection well;

(h) To areas where karst features, including unimproved sinkholes, are present or within an area that would contribute drainage that could affect the karst features;

(i) To areas where a professional soil scientist determines that any one of the following conditions exists below natural grade:

(i) Bedrock within twelve inches;

(ii) Fractured or karst bedrock within three feet;

(iii) Sand or gravel lenses within twelve inches;

(iv) Dense glacial till within twelve inches; or

(v) Normal ground water elevation within twelve inches;

(j) When the ground is saturated at or near the surface, or any other condition that would result in runoff; or

(k) To land where the land application contract has expired or is void.

(3) The director may allow the land application of treated sewage to areas where the seasonal or perched ground water elevation exists during part of the year less than twelve inches below natural grade, provided:

(a) The land application only occurs when the normal ground water elevation, seasonal high ground water elevation, dense glacial till, sand or gravel lenses, or bedrock is at least twelve inches below natural grade;

(b) The storage volume requirements in table H-2 of this rule are met; and

(c) Additional storage volume is provided for all of the treated sewage that is generated, when land application is prohibited due to seasonal variations in the vertical separation distance.

(4) Except as provided in paragraph (E)(2) of this rule, no person shall operate a land application system without an approved land application management plan.

(5) Except as provided in paragraph (E)(2) of this rule, no person shall operate a discharging land application system without an approved NPDES permit and land application management plan.

(D) Land application systems: general requirements.

(1) A land application system shall be designed, operated and maintained in accordance with this chapter and all other applicable rules and laws. The director may deny any land application system permit application that does not contain the required information.

(2) No land application system shall conflict with an areawide waste treatment management plan adopted in accordance with section 208 of the Clean Water Act (33 U.S.C. section 1288, effective February 4, 1987), in accordance with section 6111.03 of the Revised Code.

[Comment: The rule contains references to the Federal Water Pollution Control Act, also known as the Clean Water Act. This federal statute is generally available to the public through libraries and on-line sources, including the Ohio EPA and U.S. EPA websites.]

(3) The design and siting of any treatment works, including any storage facility, or land application area that is part of a land application system shall take into consideration any water quality problems in the watershed and contributing sources of pollution, including any defined by a total maximum daily load (TMDL) project or report. In order to protect public health or the environment, the director may also require an applicant to consider surface waters that are not currently in attainment or are awaiting an official TMDL.

(a) The following sources of impairment shall be considered, where a TMDL has defined a load allocation or wasteload allocation to maintain water quality standards:

(i) Sediment;

(ii) Fecal coliform bacteria;

(iii) Nutrients; or

(iv) Dissolved oxygen.

(b) In order to maintain load allocations or wasteload allocations, as defined by a TMDL, the director may require any person proposing to land apply treated sewage to:

(i) Maintain larger isolation distances;

(ii) Achieve class A treated sewage prior to land application; or

(iii) Reduce application rates.

(4) Any land application management plan application shall be on forms specified by the director and shall include such additional information as the director deems necessary.

(5) Except as provided in paragraph (E)(2) of this rule, no person shall allow the discharge of treated sewage to waters of the state from a land application system installed after the effective date of this rule without first obtaining an NPDES permit pursuant to Chapter 3745-33 of the Administrative Code.

(6) Any person proposing to use a land application system to treat sewage from two or more homes or to treat ten thousand gallons per day or greater, and not proposing to contract with a public entity such as a county or municipality to operate the disposal system, shall submit the following information to demonstrate financial, legal and technical capability to own and operate a disposal system:

(a) Financial and personnel commitments that are needed to provide for effective management and operation of the land application system;

(b) Documentation of ownership accountability, which includes the legal authority to take the measures necessary for construction, operation, and maintenance of the land application system;

(c) Assurances that the applicant has committed to proper operation and management of the land application system, including assurance of compliance with certified operator requirements in accordance with Chapter 3745-7 of the Administrative Code;

(d) The organizational structure, credentials of management and operations personnel, and cooperative agreements or service contracts;

(e) Demonstration of the applicant's ability to address both customer and compliance issues, including violations of applicable portions of the Revised Code and the Administrative Code; and

(f) A land application management plan in accordance with paragraph (E) of this rule that includes:

(i) A listing of external contacts and resources and a description of how they will be effectively utilized;

[Comment: External contracts and resources includes any maintenance or oversight that is outsourced.]

(ii) A financial plan describing the land application system revenues and cash flow for meeting the costs of construction and the costs of operation and maintenance for at least five full years from the date the applicant anticipates initiating operation. At a minimum, the financial plan shall include:

(a) Projected financial statements for each of the first five years of operation, including:

(i) A balance sheet;

(ii) An income statement; and

(iii) A statement of cash flow; and

(b) A demonstration of ability to fund the cost of repairs, capital replacement, and compliance.

(7) Any person that is or will be regulated as a public utility shall obtain and submit to the director a copy of their certificate of necessity and need from the public utilities commission of Ohio with the permit to install application.

(E) Land application systems: land application management plan and NPDES permit requirements.

(1) Requirements for land application systems installed after the effective date of this rule.

(a) A land application system shall be protective of public health and the environment.

(b) A land application system shall be operated in accordance with an approved land application management plan.

(c) Land application shall only occur at times identified in the approved land application management plan.

(d) Treated sewage shall be land applied so as to minimize direct human contact, and the potential for creating aerosols and mist.

(e) Signs shall be installed at the entrance to each land application site, to inform the public that the land is used for land application of treated sewage. At least one sign shall be posted at each field or site. Each sign shall include notification that:

(i) All above ground sewage distribution pipes contain "Non-potable Water that is Not Suitable for Human Consumption"; and

(ii) If applicable, all nozzles distribute "Non-potable Water that is Not Suitable for Human Consumption".

(f) No treated sewage shall be land applied within the emergency management zone of a public water system using surface water or within one thousand five hundred feet of any drinking water intake, whichever is greater unless the treated sewage meets the water quality standards established for the public water supply use designation under Chapter 3745-1 of the Administrative Code.

(g) No person shall install a land application system after the effective date of this rule without first obtaining:

(i) For any land application system that will not discharge to waters of the state, a land application management plan. A land application management plan;

(a) Is effective for five years, starting from the date it was approved by the director. A new land application management plan shall be submitted to Ohio EPA at least six months prior to expiration of any existing land application management plan. If a person submits a new land application management plan six months prior to expiration of the existing plan and Ohio EPA has not approved the new land application management plan prior to the expiration of the existing land application management plan, the existing land application management plan shall be effective until the new land application management plan is approved by the director. If a person does not submit a new land application management plan six months prior to expiration of the existing plan, the existing land application management plan will expire at the end of the five years;

(b) Shall be in narrative form and shall include:

(i) Information about the operator of the land application system, including:

(A) The operator's classification necessary for the operating treatment works;

(B) The number of hours per week that an operator will be working at the treatment works or land application area; and

(C) A description of the operator's experience in operating a land application system;

(ii) A detailed description of the method or methods used for sewage handling and storage;

(iii) The proposed effluent limits and corresponding minimum monitoring frequencies for the land application system;

(iv) A detailed description of how operation and maintenance records will be maintained in accordance with this rule for the land application system;

(v) An equipment calibration and maintenance schedule;

(vi) Written justification supporting the determination of land application rates, such as in inches per day. The land application rates shall ensure that no runoff occurs into surface waters of the state;

(vii) Information on how any site specific management practices to prevent runoff will be maintained;

(viii) The determination of appropriate weather conditions required for land application; and

(ix) A map that:

(A) Locates the present and known proposed occupied buildings, non-occupied buildings, developments and areas easily accessible to the public within three hundred feet of the land application area; and

(B) Identifies the closest public sewerage system and its planning area, such as established pursuant to section 208 of the Clean Water Act (33 U.S.C. section 1288, effective February 4, 1987), within one thousand feet of the land application area; and

(ii) For any discharging land application system, a complete application for an NPDES permit that includes a land application management plan in accordance with paragraphs (E)(1)(a) to (E)(1)(g)(i)(b)(ix)(B) of this rule. When a land application management plan is part of the NPDES permit, the only application fee required is the NPDES permit application fee. No separate application fee or director's action is required for a land application management plan that is submitted as part of an NPDES permit.

[Comment: All treatment works that discharge are subject to water quality standards rules, Chapter 3745-1 of the Administrative Code, and shall be processed according to the procedures in rule 3745-1-05 of the Administrative Code (antidegradation), Chapter 3745-2 of the Administrative Code, Chapter 3745-33 of the Administrative Code, Chapter 3745-42 of the Administrative Code and Chapter 3745-47 of the Administrative Code.]

(2) Requirements for land application systems installed prior to the effective date of this rule.

(a) A land application system installed prior to the effective date of this rule shall be protective of public health and the environment. Where the director, or his authorized representative, determines that an existing land application system is protective of public health and the environment, the director may waive any requirement in paragraph (C), paragraph (D) or any requirement in paragraphs (F) to (N) of this rule.

(b) For land application systems installed prior to the effective date of this rule, any person that operates or owns a land application system shall submit to the director the following documents within five years after the effective date of this rule:

(i) Effluent pollutant sampling and monitoring records, for the past five years;

(ii) Flow monitoring records, for the past five years; and

(iii) For any land application system that:

(a) Will not discharge, a land application management plan in accordance with paragraph (E)(1) of this rule; or

(b) Will discharge, a complete application for an NPDES permit and a land application management plan in accordance with paragraph (E)(1) of this rule.

(c) Treated sewage shall be land applied so as to minimize direct human contact, and the potential for creating aerosols and mist.

(d) No treated sewage shall be land applied within the emergency management zone of a public water system using surface water or within one thousand five hundred feet of any drinking water intake, whichever is greater unless the treated sewage meets the water quality standards established for the public water supply use designation under Chapter 3745-1 of the Administrative Code.

(F) Land application systems: permit to install application requirements. The director may deny any permit to install application that does not include the required information. No person shall install a land application system after the effective date of this rule without first obtaining a permit to install for the land application system pursuant to Chapter 3745-42 of the Administrative Code.

[Comment: The following table is provided to assist the reader with understanding the permit to install application requirements for a land application system and is not intended to be used in lieu of paragraphs (F)(1) to (F)(4) of this rule. A checkmark indicates what is required.]

Permit to install application requirements	Design Flow (gallons per day)			
	Less than 10,000		Greater than or equal to 10,000	
	Land application rate		Land application rate	
	Less than or equal to 12 inches per acre per year	Greater than 12 inches per acre per year	Less than or equal to 12 inches per acre per year	Greater than 12 inches per acre per year
Engineering report	☑	☑	☑	☑
Site investigation report	☑	☑	☑	☑
Detailed plans and specifications	☑	☑	☑	☑
Land application contract	If applicable	If applicable	If applicable	If applicable
Treatment works operation and maintenance plan	If applicable	If applicable	If applicable	If applicable
Land application management plan	☑	☑	☑	☑
NPDES permit application	If applicable	If applicable	If applicable	If applicable
Hydraulic and nutrient balance for land application area	No	☑	No	☑
Ground water monitoring plan for land application area	No	Case by case	No	Case by case
Ground water monitoring plan for any storage facility	No	No	☑	☑
Ground water monitoring plan for any lagoon	☑	☑	☑	☑
Hydraulic balance for treatment works	Minimal information required	Minimal information required	☑	☑
Determine background phosphorus for land application area	No	No	Minimal information required	☑
Hydrogeological site investigation for land application area	No	No	Minimal information required	☑

(1) The permit to install application for any land application system with a design flow less than ten thousand gallons per day and land application rates less than or equal to twelve inches per acre per year shall:

(a) Include a hydraulic balance that:

(i) Describes the assumptions and provides the calculations used to determine the initial and future design flows for the land application system; and

(ii) Describes the assumptions and provides the calculations used to size the treatment works, including a storage facility, the land application area, the equipment and all appurtenances;

(b) Include a site investigation report for any lagoon, any storage facility or any land application area that is part of a land application system. The site investigation report shall:

(i) Be prepared prior to any construction activities;

[Comment: If the construction activities include the construction of a golf course, Ohio EPA recommends that the site investigation be accomplished prior to the design of the golf course.]

(ii) Contain a soils and site evaluation for any lagoon, any storage facility or any land application area that is part of a land application system, in accordance with paragraph (N) of this rule;

(iii) Contain for any lagoon, any storage facility or any land application area that is part of a land application system, a detailed description of the existing and proposed surface and subsurface drainage ways within twenty feet of any lagoon or storage facility and within twenty feet of any land application area. This description shall include a map that is based on available records and any information obtained from site visits. The map shall:

(a) Locate all surface drainage ways, including drainage swales, ditches, streams, rivers, natural or constructed wetlands, and ponds and lakes; and

(b) Locate all subsurface tiles and subsurface drains within two vertical feet below natural grade;

(iv) Contain for any lagoon, a hydrogeologic site investigation report. The hydrogeological site investigation report shall be developed in accordance with paragraph (M) of this rule;

(v) Contain for any lagoon, a ground water monitoring plan in accordance with paragraph (L) of this rule, if required by paragraph (L) of this rule; and

(vi) Contain for any storage facility, in lieu of a hydrogeologic site investigation report, publicly available published hydrogeologic information including, but not limited to:

(a) Ground water resource maps, ground water pollution potential maps, surficial geology maps, and water well logs from the Ohio department of natural resources;

(b) United States department of agriculture soil surveys;

(c) United States geological survey studies;

(d) Other readily available sources that cover an area within two thousand feet from the boundaries of the site; and

(e) The results of all onsite geotechnical studies conducted at the site to include all subsurface data gathered. If soil probes, soil pits or soil borings are required to characterize the site, they shall be done in accordance with paragraph (N) of this rule;

(c) In accordance with this chapter, include detailed engineering plans and specifications. In addition to the other requirements of this chapter, the detailed engineering plans shall also include a site plan that shall:

[Comment: Isolation distances. In the case of any reference to a building, the measurement shall 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 shall 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 shall be taken from the outer bank or the toe of the impoundment.]

(i) Be drawn to scale;

(ii) Show isolation distances in accordance with paragraphs (H) and (J) of this rule;

(iii) Show any onsite treatment works, buildings, storage facilities, land application areas, and land application or distribution networks, and the

application areas for each nozzle, center pivot system or point of distribution;

(iv) Provide the location of buildings and roads within one hundred feet beyond the perimeter of the land application system;

(v) Provide the location of any public drinking water supply intakes within one hundred feet beyond the perimeter of the land application system on the detailed plans;

(vi) Provide the location of any wells, including drinking water wells and UIC class V injection wells within one hundred feet beyond the perimeter of the land application system;

(vii) Provide the location of drinking water source protection areas and inner management zones for public water systems using ground water, emergency management zones for public water systems using surface water within one hundred feet beyond the perimeter of the land application system; and

(viii) Provide the location of the existing and proposed surface and subsurface drainage ways within twenty feet of any lagoon, any storage facility or any land application area;

(d) Include a land application contract for any land application system that does not maintain the isolation distances, in accordance with paragraphs (H) and (J) of this rule. For a land application system that serves more than one residence and where land application is the sole method of disposal, the director may require a land application contract for ninety-nine years;

(e) If applicable, include a treatment works operation and maintenance plan. If the permit to install is for a treatment works as part of the land application system, the operation and maintenance plan shall address the following:

(i) The operating procedures for each component of the treatment works;

(ii) The required sampling and monitoring procedures;

(iii) The maintenance schedule for each component of the treatment works and appurtenant structures; and

(iv) A plan for maintenance of the storage facility liner system that includes, but is not limited to, a description of the steps to be taken to clean the sludge from the storage facility and the inspection and maintenance schedule for the liner to ensure tears, obvious flaws and ruptures are documented and corrected; and

[Comment: The ultimate goal of the plan shall be to ensure the integrity of the liner system that will in turn protect the underlying ground water resources.]

(f) Include a land application management plan in accordance with paragraph (E) of this rule.

(2) A permit to install application for any land application system with a design flow less than ten thousand gallons per day and land application rates greater than twelve inches per acre per year, shall:

(a) Meet all requirements in paragraph (F)(1) of this rule;

(b) Include a hydraulic and nutrient balance for the land application area, except as otherwise prescribed in this paragraph. A hydraulic and nutrient balance that supports the proposed size of land needed for land application shall be submitted with the permit to install. The hydraulic and nutrient balance shall demonstrate that the phosphorus and nitrogen loading rates will not adversely impact surface or ground waters. The application shall demonstrate the following for:

(i) Nitrogen. If the total inorganic nitrogen limit of ten milligrams per liter (i.e., nitrogen option 1) will be met, then a nitrogen balance is not required. The concentration of nitrate-nitrogen in the ground water below land on which treated sewage has been applied shall at all times be less than ten milligrams per liter. The Ohio State university extension bulletin number 860, "Reuse of Reclaimed Wastewater Through Irrigation", dated 1997, demonstrates an acceptable procedure for calculating the nitrogen nutrient and hydraulic balance. 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; and

[Comment: The Ohio State university extension bulletin number 860, "Reuse of Reclaimed Wastewater Through Irrigation" can be found at the following web address: http://ohioline.osu.edu/b860/index.html.]

(ii) Phosphorus. The soils shall be tested for phosphorus levels. Unless otherwise deemed acceptable by the director, the restriction of phosphorus application shall be based on the phosphorus index method, as developed by the natural resource conservation service in Ohio. For soils with soil phosphorus test results greater than one hundred fifty parts per million (three hundred pounds per acre) Bray-Kurtz P1 extraction or one hundred seventy parts per million (three hundred forty

pounds per acre) Mehlich 3 extraction, the director shall not approve land application of treated sewage unless the permit to install demonstrates to the director, using a phosphorus index, that there is a low relative risk of phosphorus movement to waters of the state at the land application site; and

(c) Provide a ground water monitoring plan in accordance with paragraph (L) of this rule for any land application area.

(3) A permit to install application for any land application system with a design flow greater than or equal to ten thousand gallons per day and land application rates less than or equal to twelve inches per acre per year shall:

(a) Meet all requirements in paragraph (F)(1) of this rule;

(b) Include, for any land application system where land application is the sole method of disposal, a land application contract for at least ninety-nine years, unless an alternative non-discharging option is available and included in the land application management plan;

(c) Include a ground water monitoring plan in accordance with paragraph (L) of this rule for any storage facility;

(d) Include in the engineering report for any treatment works, a hydraulic balance used to size the treatment works;

(e) Include in the engineering report for any treatment works not proposing to meet class A treated sewage effluent limits in table K-2 of this rule, additional information, as deemed necessary by the director, regarding the sizing of the storage and land application area; and

(f) Include as part of the site investigation report a characterization of the land application area that includes the following:

(i) The location of all class V injection wells, public water system wells, drinking water source protection areas and inner management zones for public water systems using ground water public water supply intakes, and private water wells, any part of which wells, areas or zones are within two thousand feet of any proposed storage facility site; and

(ii) For any construction related activities, identification of all soil additions and soil amendments that may be made to the site that will substantially alter the permeability or infiltrative capacity of the soil.

(4) A permit to install application for any land application system with a design flow greater than ten thousand gallons per day and land application rates greater than twelve inches per acre per year shall:

(a) Meet all requirements in paragraphs (F)(1) to (F)(3) of this rule;

(b) Include a ground water monitoring plan in accordance with paragraph (L) of this rule for any treatment works;

(c) Include a hydrogeologic site investigation in accordance with paragraph (M) of this rule for the land application area;

(d) Include, in the engineering report, a hydraulic balance used to size the storage facility; and

(e) Provide the results of site specific soil samples, as part of the hydrogeologic site investigation to establish background phosphorus (e.g., Bray-Kurtz P1) levels. The Bray-Kurtz P1 extraction or Mehlich 3 extraction shall be used to determine the background level unless an alternative method is approved by the director.

(G) Land application systems: design requirements for a treatment works or sewerage system. Except where specific design criteria or methodologies are required by this rule, generally accepted design standards and methodologies shall be used to design the treatment works, including any treatment lagoon, or the sewerage system that is part of any land application system.

[Comment: one example of a set of generally accepted design standards and methodologies is "Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers - Recommended Standards for Wastewater Facilities, also known as Ten States Standards. This document is published by Health Education Services, A Division of Health Research, Inc., P.O. Box 7126, Albany, NY 12224. Phone: 518-439-7286. Web: www.hes.org."]

(H) Land application systems: design requirements for storage facilities.

[Comment: Isolation distances. In the case of any reference to a building, the measurement shall 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 shall 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 shall be taken from the outer bank or the toe of the impoundment.]

(1) A storage facility shall:

(a) Maintain the isolation distance requirements listed in table H-1 of this rule. The director may reduce the isolation distance requirements if the storage facility contains class A treated sewage; and

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

-Table H-1 Minimum required isolation distances-

Siting criteria	Minimum required isolation distance (feet)
Occupied building	Three hundred
Private potable water source not owned by the person land applying sewage	Three hundred
Private potable water source owned by the person land applying sewage	Fifty
UIC class V injection well	Three hundred
Property line	Fifty

(2) Siting requirements for storage facilities.

[Comment: Information on the location of drinking water source protection areas, inner management zones, emergency management zones 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 InternetWHP@epa.state.oh.us or on the internet at http://www.epa.state.oh.us/ddagw/pdu/swap.html.]

(a) Storage facilities may not be located within drinking water source water protection area for a community, or non-transient non-community public water system using ground water unless:

(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 3745-09-04 of the Administrative Code;

(vi) The storage facility is located outside of the inner management zone for a community water supply or non-transient, non-community public water system using ground water;

(vii) The storage facility is located outside a drinking water source protection area for a non-transient, non-community or transient, non-community public water system using ground water, the storage facility is located at least three hundred feet away from a water supply well for a non-transient, non-community or transient, non-community public water system, or the storage facility is located beyond the farthest distance ground water will travel to such systems in one year, whichever results in a greater distance from the well;

(b) Storage facilities may not be located within three hundred feet of a water supply well for a transient, non-community public water system.

(c) Storage facilities may not be located within the emergency management zone of a public water system using surface water or not within one thousand five hundred feet of the 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 H-2 of this rule shall be met.

- Table H-2 Minimum storage volume requirements-

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

[Comment: A continuous discharge occurs when a discharge by a land application system is permitted to surface waters year-round.]

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

(i) The number of storage days required;

(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; and

(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. This document can be found at the following web address: http://ohioline.osu.edu/b860/index.html. 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: the freeboard requirements in table H-3 of this rule shall be met.

-Table H-3 Minimum freeboard requirements for storage facilies-

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 (H)(5)(b) and (H)(5)(c) of this rule, the storage facility shall have a recompacted clay liner designed in accordance with paragraph (H)(5)(a) of this rule.

(a) Unless otherwise specified in the detailed engineering plans approved by the director, a recompacted clay liner shall be constructed in accordance with the following:

(i) 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;

(ii) 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;

(iii) 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 shall be used to determine compaction rates;

(iv) 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;

(v) 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 shall then be retested for compliance;

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

(vii) Soils used for the liner shall have from fifteen to thirty per cent clay content and shall 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;

(viii) 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 (H) of this rule;

(ix) 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; and

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

(a) 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; or

(b) 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.

-Table H-4 Required thickness of recompacted clay liner-

Available vertical separation distance	Required 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

(b) If a synthetic liner is used in lieu of a recompacted clay liner, it shall:

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

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

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

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

(I) Land application systems: design criteria for land application distribution systems.

(1) Spray distribution system. The design of any land application spray distribution system shall:

(a) Provide for uniform distribution of the treated sewage. Where a land application area consists of various soils groups:

(i) Different distribution zones could be utilized, where the application rate varies per zone based on the site specific soils; or

(ii) An overall distribution rate could be determined by calculating a weighted average based on the site specific soils.

(b) Consider the size of suspended solids retained in the effluent when sizing the sprinkler or other distribution device. The diameter of the sprinkler nozzle used as part of the land application system shall be at least three times the size of any suspended solids in the treated sewage being sprayed; and

[Comment: Depending on the type of treatment works, the director may require additional screening or filtration to prevent spray nozzle clogging.]

(c) Consider the existence of surface and subsurface drainage ways and their potential to convey effluent to waters of the state.

(2) If soil probes, soil pits or soil borings are required to characterize the site, they shall be done in accordance with paragraph (N) of this rule.

(3) The director may consider a land application distribution system other than a spray distribution system, provided:

(a) The permit to install application demonstrates to the satisfaction of the director that there will be no adverse impact to surface water, ground water or human health as a result of the distribution system;

(b) The permit to install application is in accordance with this chapter and all other applicable rules and laws; and

(c) The applicant demonstrates to the director that the design of the distribution system is based on sound engineering principles and standards.

(J) Land application systems: isolation distance requirements for land application areas.

(1) Except at times identified in the approved land application management plan provided in paragraphs (J)(5) to (J)(7) of this rule, the location of the land application area shall maintain the minimum isolation distances in table J-1 of this rule. The director may reduce the isolation distance requirements where class A treated sewage is land applied. The director may increase isolation distance requirements to protect public health or the environment.

-Table J-1 Minimum required isolation distances-

Siting criteria	Minimum required isolation distance (feet)
Private potable water source not owned by the person land applying sewage	Three hundred
Private potable water source owned by the person land applying sewage	Fifty

UIC class V injection well	Three hundred
Sinkhole or karst feature	Three hundred
Property line	Fifty
Human crops that may be eaten raw	Fifty

(2) In addition to the requirements of paragraphs (C) and (J)(1) of this rule, no person shall land apply class A treated sewage:

(a) Except at Ohio EPA approved unrestricted or Ohio EPA approved restricted access sites;

(b) Within fifty feet from an occupied building;

(c) Within the sanitary isolation radius for a public water system well, as determined in accordance with rule 3745-9-04 of the Administrative Code;

(d) Within the inner management zone of a source water protection area (one-year time-of-travel area) for a community or non-transient, non-community public water system using ground water or within three hundred feet of any public water system well; and

(e) Within drinking water source protection area for a community or non-transient, non-community public water system using ground water determined to be highly susceptible to contamination unless additional engineering controls are installed sufficient to protect the ground water and ground water monitoring is performed in accordance with paragraph (L) of this rule, between the land application system and the public water system well(s).

(3) In addition to the requirements in paragraphs (C), (J)(1) and (J)(2)(c) to (J)(2)(e) of this rule, no person shall land apply class B treated sewage:

(a) Except at Ohio EPA approved restricted access sites;

(b) At any site that contains sand and gravel as the predominant natural material within five vertical feet of natural grade;

(c) Within two hundred feet from an occupied building;

(d) Within fifty feet of developed springs, karsts, sinkholes, drainage ways, subsurface tiles with surface openings, surface water bodies, and road right-of-ways;

(e) On sodded fields and forested areas with slopes greater than twelve per cent unless measures able to control runoff approved by the director, such as berms, collection ditches or check dams, are installed; and

(f) On fields with slopes greater than eight per cent unless the detailed engineering plans and specifications required by paragraph (F) of this rule include runoff control measures that demonstrate to the director runoff will not impact surface waters of the state.

(4) In addition to the requirements in paragraphs (C), (J)(1), (J)(2)(c) to (J)(2)(e) and (J)(3)(b) to (J)(3)(f) of this rule, no person shall land apply class C treated sewage except at Ohio EPA approved sites.

(5) The siting criteria and the isolation distance requirements of this paragraph shall not apply to occupied buildings if the person who will land apply treated sewage obtains a land application contract from each owner of a neighboring occupied building located within the siting distances set forth in this rule and includes a copy of the land application contract with the permit to install application. The land application contract shall state that:

(a) The owner of the occupied building is aware of the proposed land application;

(b) The owner of the occupied building has no objection to the land application at a location not otherwise allowed by the isolation distance requirements and siting criteria in this rule; and

(c) The land application occurs between dusk and dawn and the land application system utilizes low head sprinklers or an equivalent low-exposure distribution method.

[Comment: Night time or early morning land application usually reduces the risk of people coming into direct contact with the treated sewage. Strict night time application is sometimes impractical and daytime application helps to reduce spills and over-application that might result from not being able to see the land application take place.]

(6) The director may reduce the isolation distance requirements to a property line if a land application contract from each property owner within the fifty-foot isolation distance is submitted as part of the permit to install application and treated sewage is applied from dusk until dawn with low head sprinklers, or with an equivalent low-exposure distribution method. The land application contract shall state that these property owners are aware of, and have no objection to, the proposed land application of treated sewage within fifty feet of their property lines.

(7) If class A treated sewage requirements for effluent limits and monitoring requirements in table K-2 of this rule are met, the director may reduce the isolation distance restrictions established in this rule provided the applicant can

demonstrate to the director that the potential for negative impacts to human health or waters of the state does not exist.

(K) Land application systems: treatment requirements, effluent water quality and monitoring requirements.

(1) A land application system shall be designed in accordance with table K-1 of this rule and shall have a land application management plan that contains effluent limits, which are developed and monitored in accordance with table K-1 of this rule. The director may require sampling and monitoring of pollutants not listed in tables K-2 to K-5 of this rule, to protect public health or the environment. The director may require treated sewage that will be land applied to a golf course or athletic field to meet class A treated sewage requirements in accordance with table K-2 of this rule.

(2) In addition to paragraph (K)(1) of this rule, any land application system that will discharge to waters of the state shall have an approved NPDES permit that contains, where applicable, internal and final effluent limits where:

(a) The internal limits shall:

(i) Be developed and monitored in accordance with table K-1 of this rule; and

(ii) Be applied at the point the effluent leaves the treatment works, prior to storage, or prior to land application if no storage is provided; and

(b) The final effluent limits shall be developed in accordance with best available demonstrated control technology criteria, as set forth in table 5-1 of rule 3745-1-05 of the Administrative Code or water quality based effluent limits in accordance with Chapter 3745-1 of the Administrative Code, whichever is more stringent.

-Table K-1-

Design flow for land application system (gallons per day)	Minimum sewage treatment class	Minimum effluent limits and minimum monitoring frequency requirements
Less than ten thousand	Class C	Table K-4
Greater than or equal to ten thousand	Class B	Table K-3 and table K-5

(3) The director may waive any requirement of paragraph (K)(1) of this rule, provided that the person requesting the waiver has demonstrated to the satisfaction of the director that the waiver is unlikely to adversely affect the public health or safety or the environment.

(4) In order to meet the effluent limits set forth in table K-3 or K-4 of this rule, disinfection prior to land application may be required.

Table K-2. Class A treated sewage: water quality and monitoring frequency requirements for treatment works to meet class A treated sewage requirements.

Class A treated sewage (minimum requirements)							
Effluent parameter	Effluent limits			Monitoring frequency			
				Design flow (Q) (gpd)			
	30-day average	Daily maximum	Units	Q ≥ 500,000	500,000 > Q ≥ 100,000	100,000 > Q ≥ 10,000	Q < 10,000
Flow	Monitor	Monitor	cfs	Daily	Daily	Daily	Daily
pH	6.0-9.0	6.0-9.0	s.u.	Daily	1/month	1/month	1/month
Oil & grease	-	10.0	mg/L	1/month	1/quarter	2/year	1/year
TSS	12	-	mg/l	2/week	1/week	1/2weeks	1/month
CBOD5	10	-	mg/l	2/week	1/week	1/2weeks	1/month
Fecal coliform[5]	ND in 4 of last 7 samples	14	cfu/ 100ml	3/week	2/week	1/week	1/2weeks
Escherichia coli	ND in 4 of last 7 samples	2	cfu/ 100ml	3/week	2/week	1/week	1/2weeks
Total residual chlorine [3]	-	Chlorine residual ≥1.0 and chlorine residual ≤10	mg/l	Daily	Daily	1/2weeks	1/month
Application rate	-	Monitor	in/ac/ hr	Daily when applying	Daily when applying	Daily when applying	Daily when applying
Option 1. Total inorganic nitrogen (TIN)[1]	10.0	-	mg/l	2/week	1/week	1/ 2weeks	1/month
Option 2. Nitrate-nitrogen available for leaching (demonstrative)[2]	Monitor TIN	-	mg/l	2/week	1/week	1/ 2weeks	1/month
Option 3. Application rate ≤12 in./acre/year[4]	Monitor TIN	-	mg/l	2/week	1/2weeks	1/month	1/quarter

[1] 10 mg/l effluent limit measured at discharge outfall of sewage treatment plant.

[2] 10 mg/l effluent limit met at point sewage reaches the bottom of the root zone based on approved nutrient balance.

[3] Chlorine residual only necessary for those disposal systems that use chlorine for disinfection.

[4] in/acre/year represents the application rate over the time period of a single calendar year (i.e., January 1 - December 31).

[5] All wastewater treatment works shall use E. coli as the indicator organism unless fecal coliform is specified by their existing NPDES permit.

[6] "ND" means non-detect.

Table K-3. Class B treated sewage: water quality and monitoring frequency requirements for land application systems to meet class B treated sewage requirements

Class B treated sewage (minimum requirements)							
	Effluent limits			Monitoring frequency			
				Design flow (Q) (gpd)			
Effluent parameter	30-day average	Daily maximum	Units	Q ≥ 500,000	500,000 > Q ≥ 100,000	100,000 > Q ≥ 10,000	Q < 10,000
Flow	Monitor	Monitor	cfs	Daily	Daily	Daily	Daily
pH	6.0-9.0	6.0-9.0	s.u.	Daily	1/month	1/month	1/month
Oil & grease	-	10.0	mg/L	1/month	1/quarter	2/year	1/year
TSS	45	-	mg/l	2/week	1/week	1/2weeks	1/month
CBOD5	40	-	mg/l	2/week	1/week	1/2weeks	1/month
Fecal coliform[5]	-	1000	cfu/ 100ml	3/week	2/week	1/week	1/2weeks
Escherichia coli	-	126	cfu/ 100ml	3/week	2/week	1/week	1/2week
Total residual chlorine [3]	-	Chlorine residual ≥1.0 and chlorine residual ≤10	mg/l	Daily	Daily	1/2weeks	1/month
Application rate	-	Monitor	in/ac/ hr	Daily when applying	Daily when applying	Daily when applying	Daily when applying
Option 1. Total inorganic nitrogen (TIN)[1]	10.0	-	mg/l	2/week	1/week	1/2weeks	1/month
Option 2. Nitrate-nitrogen available for leaching (demonstrative)[2]	Monitor TIN	-	mg/l	2/week	1/week	1/2weeks	1/month
Option 3. Application rate ≤12 in./acre/year[4]	Monitor TIN	-	mg/l	2/week	1/2weeks	1/month	1/quarter

[1] 10 mg/l effluent limit measured at discharge outfall of sewage treatment plant.

[2] 10 mg/l effluent limit met at point sewage reaches the bottom of the root zone based on approved nutrient balance.

[3] Chlorine residual only necessary for those disposal systems that use chlorine for disinfection.

[4] in/acre/year represents the application rate over the time period of a single calendar year (i.e., January 1 - December 31).

[5] All wastewater treatment works shall use E. coli as the indicator organism unless fecal coliform is specified by their existing NPDES permit.

Table K-4. Class C treated sewage[6]: water quality and monitoring frequency requirements for land application systems to meet class C treated sewage requirements.

Class C treated sewage (minimum requirements)				
	Effluent limits			Monitoring frequency
Effluent parameter	30-day average	Daily maximum	Units	Design flow Q < 10,000
Flow	Monitor	Monitor	cfs	Daily
pH	6.0-9.0	6.0-9.0	s.u.	1/month
Oil & grease	-	10.0	mg/L	1/year
TSS	45	-	mg/l	1/month
CBOD5	40	-	mg/l	1/month
Fecal coliform[3,5]	-	2000	cfu/ 100ml	1/month
Escherichia coli[3]	-	298	cfu/100ml	1/month
Total residual chlorine[3]	-	Chlorine residual ≥1.0 and chlorine residual ≤10	mg/l	1/month
Application rate	-	Monitor	in/ac/ hr	Daily when applying
Option 1. Total inorganic nitrogen (TIN)[1]	10.0	-	mg/l	1/month
Option 2. Nitrate-nitrogen available for leaching (demonstrative)[2]	10.0 Monitor TIN	-	mg/l	1/month
Option 3. Application rate ≤12 in./acre/year[4]	Monitor TIN	-	mg/l	1/quarter

[1] 10 mg/l effluent limit measured at discharge outfall of sewage treatment plant.

[2] 10 mg/l effluent limit met at point sewage reaches the bottom of the root zone based on approved nutrient balance.

[3] Chlorine residual only necessary for those disposal systems that use chlorine for disinfection. Effluent disinfection is not directly required; however, the entity is required to meet all applicable discharge permit limits. If disinfection facilities exist, they need to be maintained in an operable condition. Any design of wastewater treatment works should provide for the capability to install disinfection if required at a future time. Disinfection may be required if bacteriological studies or emergency conditions indicate the need.

[4] Calculations for the demonstrative nitrogen balance (i.e., nitrate-nitrogen available for leaching) are not required to be submitted if the application rate is designed to be ≤12 inches/acre/year.

[5] All wastewater treatment works shall use E. coli as the indicator organism unless fecal coliform is specified by their existing NPDES permit.

[6] Class C sewage shall only be land applied at times set forth in an approved land application management plan (i.e., times of the day that will minimize human exposure to the application of the treated sewage, such as early morning between 4 a.m. and 9 a.m.).

Table K-5. Additional effluent limits and monitoring requirements for land application systems greater than ten thousand gallons per day.

Additional effluent limits and monitoring requirements for land application systems with a design flow greater than or equal to ten thousand gallons per day[2]				
	Effluent limits		Monitoring frequency based on design flow (Q) in gallons per day	
Effluent parameter	Maximum concentration	Units	Q ≥ 100,000	100,000 > Q> 10,000
Aluminum	5.0	mg/l	1/Year	1/5 Years[1]
Arsenic	0.10	mg/l	1/Year	1/5 Years[1]
Beryllium	0.10	mg/l	1/Year	1/5 Years[1]
Boron	0.75	mg/l	1/Year	1/5 Years[1]
Cadmium	0.01	mg/l	1/Year	1/5 Years[1]
Chromium	0.1	mg/l	1/Year	1/5 Years[1]
Cobalt	0.05	mg/l	1/Year	1/5 Years[1]
Copper	0.2	mg/l	1/Year	1/5 Years[1]
Fluoride	1.0	mg/l	1/Year	1/5 Years[1]
Iron	5.0	mg/l	1/Year	1/5 Years[1]
Lead	1.5	mg/l	1/Year	1/5 Years[1]
Lithium	2.5	mg/l	1/Year	1/5 Years[1]
Manganese	0.2	mg/l	1/Year	1/5 Years[1]
Molybdenum	0.01	mg/l	1/Year	1/5 Years[1]
Nickel	0.2	mg/l	1/Year	1/5 Years[1]
Selenium	0.02	mg/l	1/Year	1/5 Years[1]
Vanadium	0.1	mg/l	1/Year	1/5 Years[1]
Zinc	2.0	mg/l	1/Year	1/5 Years[1]

[1] Shall be submitted as part of the NPDES renewal and initial application.
[2] To protect public health and the environment, the director may require monitoring for Mercury.

(L) Land application systems: ground water monitoring program requirements for land application areas, lagoons and storage facilities.

(1) Ground water monitoring program: exemptions for land application areas. A ground water monitoring program is not required for:

(a) A land application area where class A treated sewage is land applied, unless the chief of the division of drinking and ground waters of Ohio EPA or his authorized representative determines that ground water could be contaminated by class A treated sewage;

(b) A land application area where less than twelve inches of class B treated sewage is land applied per acre per year; or

(c) A land application area when less than twelve inches of class C treated sewage is land applied per acre per year.

(2) Ground water monitoring program: exemptions for storage facilities.

(a) A ground water monitoring program is not required for a storage facility when the treatment works that is part of a land application system has a design hydraulic capacity of less than one thousand gallons per day.

(b) A ground water monitoring program is not required for a storage facility when the treatment works that is part of a land application system has a design hydraulic capacity of less than ten thousand gallons per day, and the storage facility:

(i) Includes a liner that is installed for the storage facility that meets the requirements of paragraph (H) of this rule; and

(ii) Contains only class A treated sewage.

(c) A ground water monitoring program is not required for a storage facility when there is more than fifteen feet of low permeability material between the bottom of the storage facility liner and the top of the first continuous significant zone of saturation, and the storage facility:

(i) Is more than one thousand five hundred feet from the boundaries from public water supply intake;

(ii) Is not over an aquifer that yields or is capable of yielding more than one hundred gallons of water per minute; or

(iii) Is not within one thousand feet of a karst feature.

(3) Ground water monitoring program: applicability for land application areas. The director may require a ground water monitoring program for:

(a) Any land application area where more than twelve inches per year of class B treated sewage is land applied and there is less than five feet between the surface area in the application area and the top of the first continuous significant zone of saturation;

(b) Any land application area where more than twelve inches per year of class C treated sewage is land applied and there is less than five feet between the surface area in the application area and the top of the first continuous significant zone of saturation;

(c) Any land application area where the distribution system is not a spray distribution system; or

(d) Any land application area where the seasonal or perched ground water elevation can occur less than twelve inches below natural grade.

(4) General requirements for the ground water monitoring program. Except as provided in paragraphs (L)(1) and (L)(2) of this rule, or unless waived by the director, ground water monitoring shall be provided for any lagoon, any storage facility, or any land application area that is a part of a land application system.

(a) No land application system shall be operated without an approved ground water monitoring program.

(b) A copy of the written ground water monitoring program plan and all analytical results, including quality assurance information, shall be kept and shall be made available for inspection by Ohio EPA staff upon request.

(c) A ground water monitoring program that is capable of determining the impact of the land application system on the first continuous significant zone of saturation underlying the land application system shall be conducted. The ground water monitoring program shall:

(i) Continue as long as required by the director;

(ii) Include sampling and analysis methods and procedures capable of yielding a sample representative of ground water quality in the zone monitored; and

(iii) Provide at least three ground water monitoring wells for any storage facility, lagoon or land application area. The monitoring well layout shall include:

(a) One monitoring well up-gradient of the storage facility, lagoon or land application area; and

(b) Two monitoring wells down-gradient of the storage facility, lagoon or land application area into the first continuous significant zone of saturation underlying the storage facility, lagoon or land application area.

(d) All monitoring wells shall:

(i) Be installed and maintained in such a manner that will allow a ground water sample to be obtained from the well that is representative of ground water quality in the ground water unit into which the well is screened. All monitoring well locations shall be surveyed and all well construction and maintenance documentation shall be kept at the site of the storage facility and be available for inspection by Ohio EPA staff upon request; and

(ii) Be sampled semi-annually for the parameters listed in tables L-1 and L-2 of this rule. The parameters listed in tables L-1 and L-2 of this rule may be modified by the director based on site-specific waste characterization, as long as public health and the environment are protected. The director may require a sampling frequency less frequent than semi-annually, provided the owner or operator has demonstrated to the director, based on at least three consecutive years of sampling results, that human health and the environment will be protected.

-Table L-1: Semi-annual sampling parameters analyzed in the field-

pH
Specific conductivity
Temperature
Turbidity

-Table L-2: Semi-annual sampling parameters sent to a laboratory for analysis-

Ammonia
E. coli or total coliform
Nitrate-nitrogen plus nitrite-nitrogen
Chloride

[Comment: Ammonia, E. coli, total coliform, nitrate-nitrogen plus nitrite-nitrogen and chloride are parameters that can indicate ground water contamination.]

(e) All field forms, laboratory data to include quality assurance or quality control information, and other pertinent information related to the semiannual sampling event shall be kept and made available for inspection by Ohio EPA staff upon request.

(f) Within seventy-five days of sampling, a letter that includes a table containing the summarized analytical results for each monitoring well for each semi-annual sampling event shall be forwarded to the director, or to the director's duly authorized representative.

(g) The following results shall be forwarded to the director, or to the director's duly authorized representative, within fifteen days of receiving them:

(i) Nitrate-nitrogen plus nitrite-nitorgen or ammonia concentrations that are greater than five parts per million;

(ii) Chloride concentrations that are greater than one hundred twenty-five parts per million; or

(iii) Total coliform or E. coli bacteria that is detected.

(h) If the director determines, based on the ground water monitoring results, that a potential for significant adverse impact to the environment or public health is posed or if there is an impact to ground water, all land application operations shall cease until the director provides notification in writing that operations may resume. The director may:

(i) Require a more detailed ground water impact evaluation; or

(ii) Require additional monitoring wells at or near the property boundary between the contaminant plume and the down gradient receptors (such as public or private drinking water wells, springs and surface water sites used for drinking water) to be installed to evaluate the rate, extent and concentration of the contaminant plume.

(i) A written contingency plan to protect human health and the environment at down gradient receptors shall be prepared. At a minimum, the contingency plan shall include response actions:

(i) For unauthorized releases to ground water from a storage facility or lagoon;

(ii) For events, including power outages or plant shutdowns, that result or could result in impacts to:

(a) Surface water;

(b) Drainage tiles that could affect surface water; or

(c) Public or private water supplies;

(iii) For years with excessive wetness;

(iv) If storage capacity is exceeded;

(v) If the land application contract should become void; and

(vi) Any other requirements, as required by the director to mitigate an unauthorized release.

(j) Any monitoring well or boring drilled at the proposed or permitted storage facility, that is no longer needed, shall be abandoned in accordance with the requirements of rule 3745-9-10 of the Administrative Code and any other applicable requirements.

[Comment: For additional information concerning hydrogeologic site investigations and ground water monitoring procedures, consult the Ohio EPA division of drinking and ground waters "Technical Guidance Manual for Hydrogeologic Investigations and Ground Water Monitoring", February 1995. This document can be found on the Ohio EPA web site at the following address: http://www.epa.state.oh.us/ddagw/tgmweb.htm.]

(M) Land application systems: hydrogeologic site investigation requirements. When a hydrogeologic site investigation is required by paragraph (F) of this rule, a hydrogeologic site investigation report shall be submitted as part of the permit to install that, at a minimum:

(1) Is presented in narrative form;

(2) Contains sufficient hydrogeologic information to allow the director to:

(a) Identify and characterize the hydrogeology of the first continuous significant zone of saturation under the land application system and all geologic strata that exist above that zone; and

(b) Sufficiently characterize the site geology to allow for the evaluation of the proposed design of the land application system and to ensure that it will comply with the requirements of this chapter and Chapter 6111. of the Revised Code;

(3) Contains a description, based on publicly available information, of the hydrogeology within two thousand feet of the perimeter of the proposed land application system. This description shall:

(a) Identify all aquifer systems used as water supplies;

(b) Include all well logs of public and private water supply wells;

(c) Identify the average regional yield of the uppermost aquifer system underlying the site;

(d) Describe the direction of ground water flow in the aquifer systems used as water supply sources;

(e) Identify recharge and discharge areas for any of the aquifer systems used as water supply sources;

(f) Identify on a map any:

(i) Public water system wells within two thousand feet of the perimeter of the land application system;

(ii) Drinking water source protection areas and inner management zones for public water systems using ground water; and

(iii) Emergency management zones that extend to or past the nearest land application system boundary;

(g) Describe the regional stratigraphy including any regional stratigraphic or structural features, such as the bedrock surface, bedrock dip or joint structures, that may influence the ground water flow system;

(h) Describe the regional geomorphology, including the location of surface water bodies, flood plains, etc.; and

(i) Describe any topographic features that may influence the ground water flow system and structural geology; and

(4) Describe in detail and analyze the geology and hydrogeology under the proposed land application system. This description shall be based on data collected using appropriate subsurface investigatory methods such as borings, monitoring wells, tensiometers, geophysical surveys, soil surveys, cone penetrometers, piezometers and test pits. The description shall, at a minimum:

(a) Describe the consolidated and unconsolidated deposits forming stratigraphic units from natural grade down to the base of the first continuous significant zone of saturation underlying the land application system including the following characteristics:

(i) For unconsolidated stratigraphic units, the textural classification using the unified soil classification system (USCS);

(ii) For consolidated stratigraphic units, if necessary, the rock types, such as limestone, dolomite, coal, shale, siltstone and sandstone;

(iii) Color, moisture content, stratigraphic features such as layering, interbedding or weathering, fracturing, jointing and other types of secondary porosity and any other visible accessory minerals such as pyrite, calcite or gypsum;

(iv) Atterberg limits;

(v) Grain size distribution (sieve and hydrometer curves for representative samples of each group of borings of similar soil composition);

(vi) Hydraulic conductivity;

(vii) Thickness;

(viii) Lateral extent; and

(ix) Depth and elevation;

(b) Describe the geomorphology at the proposed land application system, including surface water bodies and topographic features, that may influence the flow of ground water in the first continuous significant zone of saturation or any overlying significant zones of saturation including the identification and characterization of recharge and discharge areas within the boundaries of the proposed land application system. This description shall include identification of any sources of seeps, springs, streams and other surface water features;

(c) Describe variations in texture, saturation, stratigraphy, structure or mineralogy exhibited by each stratigraphic unit that could influence the ground water flow or quality in the first continuous significant zone of saturation or any overlying significant zones of saturation;

(d) Describe the first continuous signification zone of saturation under the land application system, including the depth to, and lateral and vertical extent of, the first continuous significant zone of saturation under the land application area. This description shall, at a minimum:

(i) Describe in both a narrative and on a map, the ground water flow system, including rate of flow, and direction of flow in the first continuous significant zone of saturation to extend underlying the land application system; and

(ii) Identify and characterize recharge and discharge areas within the boundaries of the proposed land application system, including any connections of ground water with seeps, springs, streams and other surface water features;

(e) Describe in detail:

(i) The drilling and soil sampling methods used in characterizing the soil and hydrogeologic properties of any unconsolidated and consolidated rock material underlying the proposed land application system;

(ii) The analytical procedures and methodology used to characterize the soil and rock materials obtained from test pits and borings;

(iii) The methodology, equipment and procedures used to define the first continuous significant zone of saturation underlying the land application system, including:

(a) Well and piezometer construction specifications; and

(b) Water level measurement procedures; and

(iv) The methodology, equipment and procedures used to determine the ground water quality (if determined) in any significant zone of saturation including the requirements specified in paragraph (J)(4) of this rule; and

(f) Submit all boring logs, test pit logs, ground water quality data and soil analytical data and any other data generated while preparing this report.

(N) Soil and site evaluation requirements. For every land application system, a soil and site evaluation shall be done in accordance with this paragraph and shall:

(1) Be submitted on forms approved by the director to the appropriate Ohio EPA district office;

(2) Be submitted with a permit to install application;

(3) Include a site specific soil map which locates, as necessary, any soil probes, any soil delineations, any soil pits or soil borings. In addition to the information in the general soil survey, the location of any soil delineations and the location and number of soil probes, pits or borings necessary to describe the soil conditions shall be determined by a professional soil scientist for the land application site, the lagoon site or the storage facility site. The soil delineations, soil probes, soil pits or soil borings shall:

[Comment: The county soil maps are at a scale for larger systems and for land use planning purposes. A more detailed map should be developed for land application systems so that all the included soils can be delineated, characterized, and avoided, if necessary. The Ohio state university extension bulletin number 905, "Soil and Site Evaluation for Onsite Wastewater Treatment", dated 2005, demonstrates an acceptable procedure for developing soil maps.]

(a) Be performed or evaluated by a professional soil scientist;

[Comment: For soil borings deeper than fifteen feet, a professional with the appropriate knowledge and experience, such as a geologist or hydrogeologist, should also be consulted.]

(b) Be taken prior to any construction activities;

(c) When the proposed land application area is a golf course, be taken prior to the construction of any tee boxes, fairways and greens;

(d) For any land application area, be done to a minimum depth of thirty inches below natural grade. To protect public health or the environment, the director may require deeper soil probes, soil pits or soil borings. In areas where glacial till and fractured bedrock substratum soils are in close proximity, the soil investigation shall be done to a depth of at least fifty inches or until bedrock is encountered; and

(e) For any storage facility or lagoon, be done to a minimum depth of fifteen feet below the proposed bottom of the recompacted clay liner;

(4) Based on the information in the general soil survey, published loading rate tables, and the data from any soil borings, identify the permeability and thickness of:

(a) The most permeable layer of the soil mantle at each soil probe, soil pit or soil boring location; and

(b) The least permeable layer of the soil mantle at each soil probe, soil pit or soil boring location;

(5) Identify the vertical separation distance between the natural grade and all of the following conditions:

(a) Bedrock;

(b) Sand and gravel lenses;

(c) Dense glacial till; and

(d) Ground water, including any seasonal high ground water or perched water table; and

(6) Discuss the site topography, including:

(a) The site slope;

(b) The site vegetative cover;

(c) Any drainage ways and waterways within, below or bordering the land application system; and

(d) Any impervious surfaces.

(O) Record keeping, reporting requirements, compliance, enforcement, and oversight.

(1) Record keeping.

(a) Upon request by the director or his authorized representative, any person shall make available, within a reasonable time for inspection and copying, all records pertaining to the land application system, including:

(i) Pollutant sampling records;

(ii) Inflow and outflow monitoring records; and

(iii) Storage impoundment monitoring records for freeboard and the number of days of remaining storage.

(b) Any person who owns a land application system shall maintain all sampling and monitoring records at the treatment works for at least five years. These records shall be made available to Ohio EPA, upon request.

(2) Reporting requirements.

(a) The director shall be notified in writing within seven days of any person discovering noncompliance with a land application management plan or an NPDES permit.

(b) The director shall be notified at least six months prior to the expiration date of a land application contract.

(3) Compliance, enforcement and oversight.

(a) The director may deny any land application management plan application not in compliance with this chapter and require the submittal of a new land application management plan application, including all applicable fees, to be submitted to Ohio EPA within thirty days.

(b) The director may revoke any land application management plan not in compliance with this chapter.

(c) A land application system shall maintain compliance with effluent limits in the land application management plan or NPDES permit at the point the effluent leaves the treatment works, prior to storage, or prior to land application, if no storage is provided.

(d) The director may require sampling and monitoring for pollutants at any drain tile outfall, including sampling for:

(i) $CBOD_5$;

(ii) Total suspended solids;

(iii) Fecal coliform bacteria; or

(iv) Total inorganic nitrogen.

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