567—69.1(455B) General.

69.1(1) *Applicability.* These rules are applicable only to private sewage disposal systems (PSDSs).

69.1(2) *Definitions.* In addition to the definitions, references, and abbreviations in 567—Chapter 60, the following definitions shall apply to this chapter:

"Administrative authority" means the department or the local county board of health as authorized by Iowa Code section 455B.172 and chapter 137.

"Approved" means accepted or acceptable under an applicable specification stated or cited in these rules or accepted by the administrative authority as suitable for the proposed use.

"Area drain" means a drain installed to collect surface or storm water from an open area of a building or property.

"At-grade system" means a pressurized soil absorption system constructed at or near a primary treatment unit or a secondary treatment system.

"Building drain" means that part of the lowest horizontal piping of a drainage system that receives the discharge from soil, waste, and other drainage pipes inside the walls of any building and conveys the same to the building sewer.

"Building sewer" means that part of the horizontal piping from the building wall to its connection with the main sewer or the primary treatment portion of a PSDS conveying the drainage of a building site.

"Chamber system" means a buried structure, typically with a domed or arched top, providing at least a six-inch height of sidewall soil exposure creating a covered open space above a buried soil infiltrative surface.

"Confining layer," also known as "limiting condition," means solid or fractured bedrock, seasonally high groundwater level, any layer of soil with a stabilized percolation rate exceeding 60 minutes for the water to fall one inch, or any other factor (natural or manmade) that does not provide the 36-inch depth separation required for soil absorption.

"Conventional," when used in reference to sewage treatment, means a soil absorption system involving a series of two- to three-foot-wide trenches filled with gravel, containing a four-inch diameter rigid pipe or other alternative trench technologies to convey the sewage effluent. Gravel aggregate, chamber, and EPS aggregate systems are considered conventional soil absorption systems.

"Distribution box" means a device designed to accomplish the equal distribution of wastewater.

"Dosing siphon" means a manufactured device that provides a measured amount of effluent determined by the manufacturer's specifications and design.

"Drop box" means a structure used to divert wastewater flow into a soil absorption trench. When the trench is filled to a set level, the drop box then allows any additional wastewater not absorbed by that trench to flow to the next drop box or soil absorption trench.

"Dwelling" means any house or place used or intended to be used by humans as a permanent or temporary residence.

"Expanded polystyrene aggregate systems" or *"EPS aggregate systems"* means cylinders comprised of expanded polystyrene (EPS) synthetic aggregate contained in high-strength polyethylene netting. The cylinders are a minimum 12 inches in diameter and are produced both with and without a distribution pipe.

"Fill soil" means clean soil, free of debris or large organic material, which has been mechanically moved onto a site and has been in place for less than one year, and is characterized by a lack of distinct horizons or color patterns as found in naturally developed, undisturbed soils.

"Filtered pump vault" means a device installed in a septic or pump tank that houses a pump and screens effluent with ⅛-inch or smaller diameter openings before it enters the pump.

"Foundation drain" means the portion of a building drainage system that is provided to drain groundwater, not including any wastewater, from the outside of the foundation or over or under the basement floor and that is not connected to the building drain.

"Gravel" means stone screened from river sand or quarried and washed free of clay and clay coatings. Concrete aggregate designated as Class II by the Iowa DOT is acceptable.

"Gravel aggregate system" means a soil absorption system utilizing gravel for distribution.

"Grease interceptor" means a watertight device designed to intercept and retain or remove grease and fatty substances. The device may be located inside (grease separator) or outside (grease tank or grease trap) a facility.

"Holding tank for waste" means a structure used for the retention or storage of domestic sewage pending removal for further treatment.

"Intermittent subsurface sand filter" or *"ISSF"* means a bed of granular materials underlain by gravel and collecting tile and provided with a natural topsoil cover over the crown of the distribution system. Primary treated effluent is applied intermittently to the surface of the bed through a distribution system, and the bed is underdrained to collect and discharge the secondary treated effluent. Uniform distribution is best obtained by dosing so as to utilize the entire surface of the bed.

"Mound system" means a pressurized aboveground soil absorption system used to disperse effluent from septic tanks in cases where a seasonally high water table, high bedrock conditions, slowly permeable soils, or limited land areas prevent conventional soil absorption systems.

"Other pressure distribution device" means any device used to evenly distribute effluent other than a manufactured siphon device intended to be used for effluent distribution.

"Percolation test" means a falling water level procedure used to determine the ability of soils to absorb effluent or pretreated effluent. See Appendix B of this chapter.

"Pressure distribution system" means a network of distribution pipes in which effluent is forced through orifices under pressure. Pressure distribution may be accomplished by use of a pump, siphon device, or other manufactured pressure distribution devices.

"Pretreated effluent" means effluent treated through aeration or other methods that, upon laboratory analysis, meets or exceeds a monthly average for $CBOD_5$ of 25 mg/L and TSS of 30 mg/L.

"Primary treatment unit" means a unit or system used to separate the floating and settleable solids from the wastewater before the partially treated effluent is discharged for secondary treatment.

"Private sewage disposal system" or *"PSDS"* is defined in Iowa Code section 455B.171. For the purposes of this chapter, the term includes the treatment systems presented in this chapter.

"Professional soil analysis" means an alternative to the percolation test that depends upon a knowledgeable person evaluating the soil characteristics, such as color, texture, and structure, in order to determine an equivalent percolation or loading rate.

"Proprietary treatment system" or *"PTS"* means any device or product that is certified by a third-party certifier accredited by the American National Standards Institute (ANSI) to meet the National Sanitation Foundation (NSF)/ANSI Standard 40-2023, October 1, 2023, available on the NSF website at: www.nsf.org, or equivalent testing as determined by the department. Examples may include but are not limited to peat moss biofilters, coconut fiber filters, synthetic foam filters, polystyrene bead media filters, textile filters, modular fixed film soil systems, or aerobic treatment units.

"PVC" means polyvinyl chloride.

"Qualified sampler," for the purposes of collecting compliance effluent samples required under NPDES General Permit No. 4, means one of the following persons: a city or county environmental health staff person; an Iowa-certified wastewater treatment operator; or an individual who has received department-approved training to conduct effluent sampling.

"Roof drain" means a drain installed to receive water collecting on the surface of a roof and discharging into an area or storm drain system.

"SCH" means schedule, as in Schedule 40 pipe. It describes the wall thickness of a pipe.

"SDR" means standard dimension ratio, which is the ratio of pipe diameter to wall thickness. It is a method of rating a pipe's durability against pressure.

"Secondary treatment system" means a system that provides biological treatment of effluent from septic tanks or other primary treatment units. Examples include but are not limited to soil absorption systems, ISSFs, PTSs, or other systems providing equivalent treatment.

"Septic tank" means a watertight structure into which wastewater is discharged for solids separation and digestion (referred to as part of the closed portion of the treatment system).

"Soil absorption bed system" means a soil absorption system that is a shallow excavation lined with aggregate or other suitable materials, including a leaching chamber or EPS materials.

"Soil absorption system" means a conventional, at-grade, mound, or soil absorption bed system that uses a system of perforated conduits connected to a distribution system, forming a series of subsurface, water-carrying channels into which the septic tank effluent or pretreated effluent is discharged for direct absorption into the soil (referred to as part of the open portion of the treatment system).

"Soil professional" means a person with training and experience in soil morphology, including but not limited to experience in testing the absorption qualities of soil by the physical examination of the soil's color, mottling, texture, structure, topography, and hillslope position.

"Stream" means any watercourse listed as a "designated use segment" in 567—61.3(455B).

69.1(3) *General PSDS regulations.*

a. Connections to approved sewer systems.

(1) No PSDS shall be installed, repaired, or rehabilitated where a publicly owned treatment works (POTW) is available or where a local ordinance requires connection to a POTW. A POTW may be considered unavailable when the POTW, or any building or any exterior drainage facility connected thereto, is located more than 200 feet from any proposed building or exterior drainage facility on any lot or premises that abuts and is served by a POTW. Final determination of availability shall be made by the administrative authority.

(2) When a POTW becomes available within 200 feet, any building then served by a PSDS shall be connected to said POTW within a time frame and under conditions set by the administrative authority.

(3) When a POTW is not available, every building wherein persons generate domestic sewage shall be provided with an approved PSDS. A holding tank for waste may be used only if all other PSDS options are impractical.

(4) If a building is to be connected to an existing PSDS, that existing system shall meet the requirements of these rules.

b. Construction or alteration. All constructed or altered PSDSs shall comply with this chapter. Alteration includes any changes that affect the treatment or disposal of the waste. Repair of existing components of a PSDS that do not change the treatment or disposal of the waste are not considered alterations. However, the discharge restrictions in 69.1(8) apply.

c. Abandonment. PSDSs shall be abandoned in the following manner:

(1) Concrete tanks shall be pumped, the tank lid crushed into the tank, and the tank filled with sand or soil.

(2) Plastic, fiberglass, or metal tanks shall be pumped and removed and the cavity filled with sand or soil.

69.1(4) *Construction permit required.* No PSDS shall be installed or altered as described in 69.1(3) *"b"* unless a construction permit issued by the administrative authority is obtained prior to construction. PSDS installation shall be in accordance with these rules.

69.1(5) *Permit by rule.* This chapter is intended to act as a permit by rule for PSDSs. Activities in compliance with this chapter are permitted by the director for purposes of compliance with Iowa Code sections 455B.183 and 455B.186.

69.1(6) *Site analysis.*

a. Site evaluation. The administrative authority shall conduct a site evaluation prior to the issuance of a construction permit. Consideration shall be given but not be limited to the impact of the following:

(1) Topography, including but not limited to drainage ways, terraces, floodplains, and percent of land slope;

(2) The location of property lines, easements, buried utilities, existing and proposed tile lines, and existing, proposed, and abandoned water wells;

(3) The amount of available area for installation of the system;

(4) Evidence of unstable ground; and

(5) Alteration (cutting, filling, compacting) of existing soil profiles.

b. Soil characteristics and permeability. The soil characteristics and permeability of a specific site shall be determined by performing a percolation test or a soil analysis. The administrative authority shall determine who is a trained and qualified soil professional and who may conduct percolation tests. All percolation tests shall be conducted in accordance with Appendix B of this chapter.

c. Final inspections. The administrative authority shall conduct an at-location inspection of all newly constructed PSDSs before the system is backfilled. A final as-built drawing shall be made as part of the final inspection and kept on file with the construction permit.

d. Onsite wastewater tracking system. All pertinent information, including but not limited to the site address, owner, type, date of installation, percolation test or soil analysis, and as-built drawing of the PSDS shall be entered into the department's onsite wastewater tracking system, available on the department's website at www.iowadnr.gov, after a final inspection is conducted.

69.1(7) *Separation distances (SDs).* All PSDSs shall be located in accordance with the minimum SDs in Table I in 567—paragraph 60.2(2)*"c."*

69.1(8) *Discharge restrictions.* It is prohibited to discharge any wastewater from PSDSs (except as permitted in this chapter) to any ditch, stream, pond, lake, natural or artificial waterway, county drain tile, surface water drain tile, or land drain tile, to the groundwater, or to the surface of the ground. Under no conditions shall effluent from PSDSs be discharged to any abandoned well, agricultural drainage well, or sinkhole. Existing discharges to any of the above-listed locations or structures shall be eliminated by the construction of a system in compliance with this chapter.

a. Requirements when effluent is discharged into surface water. All discharges from PSDSs that are discharged into any designated waters of the state or subsurface drainage tile shall conform with the requirements of NPDES General Permit No. 4 (GP 4) issued by the department, as referenced in 567—Chapter 60. Prior to the use of any system discharging to designated waters of the state or a subsurface drainage tile, a Notice of Intent to be covered by GP 4 shall be submitted to the department. Systems covered by GP 4 must meet all applicable permit requirements, including effluent sampling and monitoring. No PSDS shall discharge to a state-owned natural or artificial lake, an outstanding Iowa water, or an outstanding national water as defined in 567—subrule 61.2(2).

b. Requirements when effluent is discharged above the ground surface. All discharges from PSDSs that are discharged to the surface of the ground and require a maintenance contract shall be installed, operated, and maintained by a manufacturer-certified technician in accordance with the manufacturer's instructions and the requirements of the administrative authority.

c. Requirements when effluent is discharged into the soil. No septage or wastewater shall be discharged into the soil except in compliance with this chapter.

69.1(9) *Maximum flow rates.*

a. Residential wastewater design flow rates are based on 150 gallons per bedroom per day. Wastewater design flow rates for nonresidential domestic waste applications serving the equivalent of fewer than 16 individuals on a continuing basis are detailed in Appendix A of this chapter.

b. Wastewater design flow rates for a nonresidential use that are not listed in Appendix A may be determined by a professional engineer licensed in the state of Iowa prior to issuance of a construction permit by an administrative authority. The administrative authority may require a system to be designed using the nonresidential flows listed in Appendix A.

69.1(10) *Flow equalization.* Flow equalization may be used at the discretion of a professional engineer licensed in the state of Iowa. The determination to use flow equalization shall be made prior to issuance of a construction permit by an administrative authority. If used, flow equalization shall meet all of the following criteria:

a. The design flow of the secondary treatment unit receiving the equalized flow cannot exceed 1,500 gallons per day.

b. Equalized flow to the secondary treatment unit shall be mechanically time dosed.

[**ARC 9467C**, IAB 8/6/25, effective 9/10/25; see Delay note at end of chapter]