Washington County, Minnesota
Ordinances

Ordinance No. 128
Individual Sewage Treatment System Regulations
Washington County Development Code - Chapter Four

Date Approved: 09/23/1997
Date Published: 10/15/1997
Effective Date: 10/20/1997

Resolution No. 97-142

Resolution Adopting Chapter Four of the Washington County Development Code Individual Sewage Treatment System Regulations.

October 14, 1997

Whereas,
Minn. Stat. §§ 115.55 and 115.56 and Minnesota Rule 7080 require counties to adopt an ordinance regulating the location, design, installation, use and maintenance of on-site sewage treatment systems, which regulations must be consistent with, but may be more restrictive than those regulations contained in Minnesota Rule 7080; and

Whereas,
such regulations are official controls within the meaning of Minn. Stat. Chapt. 394 and Minn. Stat. § 473.851, et seq; and

Whereas,
on July 22, 1997, the Washington County Planning Advisory Commission referred a draft of the Washington County Individual Sewage Treatment System Regulations to the County Board with their recommendations to be included in the Washington County Development Code as Chapter Four; and

Whereas,
on September 23, 1997, the Washington County Board of Commissioners conducted a public hearing on the proposed draft, as required by Minn. Stat. § 394.26 and Minn. Stat. § 394.375.51; and

Whereas,
the draft was approved by the Minnesota Pollution Control Agency on September 19, 1997 as required by

Minn. Stat. § 115.55.

Now, Therefore,
be it Resolved, that for the purpose of regulating the location, design, installation, use and maintenance of on-site sewage treatment systems so as to prevent contamination of the surface and ground waters within the County, the Board of Commissioners of Washington County ordains:

1. The regulations contained in the Individual Sewage Treatment System Regulations, Chapter Four of the Washington County Development Code attached hereto is hereby adopted in its entirety as Washington County Ordinance No. 128 and is declared to be in full force and effect from and after October 20, 1997, after its publication according to law.

2. This ordinance shall apply to all areas of the County, other than cities and towns that have adopted ordinances that comply with Minnesota Rule 7080 and are as strict as the regulations contained in the Washington County Development Code, Chapter Four, Individual Sewage Treatment System Regulations.

3. From and after October 20, 1997, the Washington County Individual Sewage Treatment System Ordinance, Washington County Ordinance No. 103, approved by the Washington County Board of Commissioners on November 3, 1992, together with all amendments thereto, is hereby repealed.

Be It Further Resolved That,
a copy of this Ordinance by submitted to the Commissioner of Minnesota Pollution Control Agency within thirty (30) days of its final adoption in compliance with Minnesota Rules 7080.0305, subd. 5.

Attest:
James R. Schug, County Administrator
Myra Peterson, Chairman, County Board

Abrahamson - X - Yes
Engstrom - X - Yes
Hauser - X - Yes
Hegberg - X - Yes
Peterson - X - Yes

Summary

Washington County Development Code
Chapter Four - Individual Sewage Treatment Systems
Ordinance No. 128

Minn. Stat. § 473.851 to 473.871 requires counties to adopt a comprehensive plan to guide the physical development of the County. This plan must be periodically updated to be consistent with the Metropolitan Systems Statements. To implement the land use component, the counties are also required to adopt official

controls. Since 1979, the official controls of Washington County have been found in the Washington County Development Code. This code regulates such things as agricultural, residential and commercial land uses, land subdivision, the use and development of the St. Croix River corridor and the shoreland and bluffland areas adjacent to other rivers, lakes and streams, the state and federally funded "201" sewage treatment system, mining operations, flood plain development, officially mapped areas and the location, design, installation, use and maintenance of on-site sewage treatment systems.

On October 1, 1997, in response to the most recent Metropolitan System Statement, Washington County adopted its 2015 Comprehensive Plan. As required by Minn. Stat. § 115.55 and Minnesota Rules Chapter 7080, this plan contained a section on waste management. According to the plan, septic tanks and drain fields remain the preferred on-site sewage treatment systems, provided that exceptions may be made when housing is clustered as part of an open space design development. To the extent authorized by law, alternate systems may be allowed if they can be designed, located, installed and maintained to prevent contamination and adequate administrative procedures are in place to ensure accountability. Soil borings and percolation tests will be required prior to approval of septic systems or building permits.

On October 14, 1997, the Washington County Board of Commissioners adopted Ordinance No. 128 regulating the location, design, installation, use and maintenance of individual sewage treatment systems. These regulations are found in Chapter Four of the Washington County Development Code and will be effective October 20, 1997 and apply in all areas of Washington County, other than cities and towns that have adopted ordinances that comply with Minn. Stat. § 115.55 and the rules promulgated thereunder and are as strict as the regulations found in this ordinance.

Sections 1,2 and 3 of Chapter Four deal with the intent, purpose, definitions and administration of the chapter. Section 4 defines what is prohibited under the chapter. Section 5 establishes the permits involved with an on-site individual sewage treatment system. Section 6 sets forth the inspection procedure. Sections 7, 8, 9, 10,11, 12,13 and 14 deal with the performance standards for standard systems. Section 15 deals with the performance standards for alternative systems. Section 16 deals with experimental systems. Section 17 deals with maintenance. Section 18 deals with abandonment. Section 19 deals with enforcement. Minnesota Rules Chapter 7080 authorized by Minn. Stat. § 115.55 and 115.56, sets forth the minimum performance standards for individual sewage treatment systems and authorizes local ordinances to be more restrictive.

The standards set forth in Chapter Four are more restrictive than those contained in Minnesota Rules Chapter 7080 in the following area:

> The Washington County regulations establish a thirty (30) day time frame to correct failing systems which pose an imminent threat to the public health, safety and welfare, whereas Chapter 7080 establishes a ten (10) month time frame.
>
> The Washington County ordinance establishes a ninety (90) day time frame for correcting failing systems that do not pose an imminent threat to public health, safety and welfare, whereas there is no time frame listed in Chapter 7080.
>
> The Washington County regulations require percolation tests and four soil borings for proposed sites, while Minnesota Rules 7080 has no such requirements.
>
> Under the Washington County regulations, a minimum of 12 inches of rock layer is required, while Minnesota Rules 7080 requires 6 inches.

Under the Washington County regulations, a maximum trench depth of 42 inches is required, while Minnesota Rules 7080 has a maximum trench depth of 48 inches.

Under the Washington County regulations, there must be 18 inches of original soil for a mound system, while Minnesota Rules 7080 requires 12 inches of original soil.

The Washington County regulations prohibit mound systems or at-grade systems on slopes greater than 12 percent, while Chapter 7080 prohibits them on slopes greater than 25 percent.

The Washington County regulations require that homeowners have tanks pumped every three years or be inspected, while Chapter 7080 requires a homeowner inspection every three years.

The foregoing is intended only as a summary of the Washington County Development Code, Chapter Four, Individual Sewage Treatment System Regulations.

A printed copy of this Ordinance, as well as a list of the differences between this Ordinance and the rules found in Minnesota Rules Chapter 7080 is available for inspection during regular office hours at the Office of the Washington County Auditor/Treasurer, Washington County Administrator, Washington County Department of Health, Environment and Land Management.

Washington County Development Code

Pursuant to MSA Ch 394, Washington County has adopted official controls for the purposes of regulating the physical development of land in the unincorporated areas of the County. These official controls are compiled into and hereafter known as the Washington County Development Code and consists of the following chapters each adopted by Ordinance.

Chapter One - Administration
Chapter Two - Zoning Regulations
Chapter Three - Subdivision Regulations
Chapter Four - Individual Sewage Treatment System Regulations
Chapter Five - Lower St. Croix RiverBluffland and Shoreland Management Regulations
Chapter Six - Shoreland Management Regulations
Chapter Seven - Mining Regulations
Chapter Eight - 201 Sewer Use Regulations
Chapter Nine - Flood Plain Regulations
Chapter Ten - Official Map Regulation and Designation

Washington County Development Code
Chapter Four
Individual Sewage Treatment System Regulations

Ordinance No. 128

Table of Contents

This chapter shall regulate the location, design, installation, use and maintenance of individual sewage treatment systems in all areas of Washington County other than cities and towns that have adopted ordinances that comply with Minnesota Statute 115.55 and are as strict as this Chapter. This chapter is authorized under Minnesota Statute Section 115.55 and 115.56 and Minnesota Statutes Chapter 145A.

SECTION 1. Intent and Purpose

1.1
This chapter is adopted for the following purposes:

(1) To protect the public health and safety of the residents of the community.

(2) To regulate the location, design, installation, use and maintenance of individual sewage treatment systems so as to prevent contamination of the surface and groundwaters within the community.

(3) To protect individual water supply wells of the community from contamination by inadequate, improperly designed, located, installed or maintained individual sewage treatment systems.

(4) To provide for the orderly development of areas of the community which are not served by central public waste treatment systems and to reduce the need to install central public systems in areas where they are not now currently planned.

SECTION 2. Definitions

2.1
For the purpose of the Chapter, certain words and phrases are defined as follows:

(1) **Absorption Area:**

The areas below a mound that is designed to absorb sewage tank effluent.

(2) **Additive, Individual Sewage Treatment System:**
A product which is added to the wastewater or to the system to improve the performance of an individual sewage treatment system.

(3) **Aerobic Tank:**
Any sewage tank which uses the principle of oxidation to decompose sewage by introducing air into the sewage.

(4) **Alternative Site:**
That portion of real property that is designated by a licensed ISTS Professional and approved by the Department to be protected from all vehicular traffic, construction and other disturbances. The site must be maintained in its original, natural soil condition so a future individual sewage treatment system or device may be constructed which meets all requirements when the original ISTS malfunctions, becomes non-repairable or when it fails to comply with the regulations.

(5) **Alternative System:**
An individual sewage treatment system employing the methods and devices presented in Section 15.

(6) **As-Builts:**
Drawings and documentation specifying the final in-place location, size, and type of all system components. These records identify the results of materials testing and describe the conditions during construction. As-builts also contain a certified statement.

(7) **At-Grade System:**
A pressurized soil treatment system where sewage tank effluent is dosed to a drainfield rock bed which is constructed on original soil at the ground surface and covered by loamy soil materials.

(8) **Baffle:**
A device installed in a septic tank for proper operation of the tank and to provide maximum retention of solids, and includes vented sanitary tees and submerged pipes in addition to those devices that are normally called baffles.

(9) **Bedrock:**
That layer of parent material which is consolidated and unweathered. Bedrock also includes layers of which greater than 50 percent by volume consists of unweathered in-place consolidated bedrock fragments.

(10) **Bedroom:**
Any room or unfinished area within a dwelling that might reasonably be used as a sleeping room.

(11) **Building:**
Any structure, either temporary or permanent, having a roof and used or built for the shelter or enclosure of any person, animal or property of any kind. For purposes of this chapter, building includes any structure whose foundation could be damaged and structural integrity jeopardized by the seepage of sewage or sewage tank effluent.

(12) **Building Drain:**

That part of the lowest piping of the draning system which receives the sewage discharge inside the walls of the building and conveys it to the building sewer beginning at least one foot outside the building footings.

(13) **Building Sewer:**
That part of the drainage system which extends from the end of the building drain and conveys its discharge to an individual sewage treatment system.

(14) **Certified Statement:**
A statement signed by a licensed installer or qualified employee certifying that work was completed in accordance with applicable requirements.

(15) **Cesspool:**
An underground pit or seepage tank into which raw household sewage or other untreated liquid waste is discharged and from which the liquid seeps into the surrounding soil, bedrock or other soil materials.

(16) **Chambered System:**
A soil treatment system where sewage tank effluent is discharged to a buried structure creating an enclosed open space with the original soil surface to act as a surface for the infiltration of sewage tank effluent.

(17) **Clean Sand:**
A soil texture composed by weight of at least 25 percent very coarse, coarse, and medium sand varying in size from 2.00 millimeters (sieve size 10) to 0.25 millimeters (sieve size 60), less than 40 percent fine or very fine sand ranging in size between 0.25 millimeters and 0.05 millimeters (sieve size 270) and no more than 10 percent smaller than 0.05 millimeters and no larger than 2.00 millimeters. Clean sand also means a soil texture which meets American Society for Testing and Materials (ASTM) specification C-33 (fine aggregate for concrete) or Minnesota Department of Transportation (MNDOT) specification 3126 (fine aggregate for Portland cement concrete). The ASTM specification is found in the 1994 Annual Book of ASTM Standards, volume 4.02, which is incorporated by reference. This document is provided by the American Society for Testing and Materials located at 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959. The MNDOT specification is found in the MNDOT Standard Specifications for Construction, 1988 Edition, and the May 2, 1994, Supplemental Specifications which are incorporated by reference. These documents are provided by the Minnesota Department of Transportation located at 395 John Ireland Boulevard, St. Paul, MN 55155. All references can be found at the Minnesota State Law Library, Judicial Center, 25 Constitution Avenue, St. Paul, MN 55155. These documents are not subject to frequent change.

(18) **Compliance Inspection:**
Any evaluation, investigation, inspection or other such process to make conclusions, recommendations, or statements regarding an individual sewage treatment system to reasonably assure an individual sewage treatment system is in compliance with regulations.

(19) **Department:**
The Washington County Department of Health, Environment and Land Management.

(20) **DNR:**
The Minnesota Department of Natural Resources.

(21) **Disclosure:**
Any conclusions or statements regarding an ISTS made by the owner of a property with or served by an ISTS

to fulfill the requirements of Minnesota Statutes, section 115.55, subdivision 6.

(22) **Distribution Box:**
A device designed to concurrently and equally distribute sewage tank effluent by gravity to a soil treatment system.

(23) **Distribution Device:**
A device used to receive and transfer effluent from a supply pipe to distribution pipes or downslope supply pipes, or both. These devices may also be known as drop boxes, valve boxes distribution boxes or manifolds.

(24) **Distribution Medium:**
The material used to distribute the sewage tank effluent within a soil treatment system. This medium includes drainfield rock, gravel-less drainfield pipe in a geotextile wrap or a chambered system.

(25) **Distribution Pipes:**
Perforated pipes that are used to distribute sewage tank effluent into a distribution medium.

(26) **Dosing Chamber, or Pump Pit or Wet Well:**
A tank or separate compartment following the sewage tank which serves as a reservoir for the dosing device.

(27) **Dosing Device:**
A pump, siphon, or other device that discharges sewage tank effluent from the dosing chamber to the soil treatment system.

(28) **Drainfield Rock:**
Igneous rock, or similar insoluble, durable, and decay-resistant material between three-fourths inch and 2-1/2 inches in size with no more than five percent by weight passing a three-fourths inch sieve and no more than one percent by weight passing a number 200 sieve. Materials greater than 2-1/2 inches in size shall not exceed five percent by weight.

(29) **Drop Box:**
A distribution device used for the serial gravity application of sewage tank effluent to a soil treatment system.

(30) **Dwelling:**
Any building or place used or intended to be used by human occupants as a single family or two family residence.

(31) **Experimental System:**
Any system which is considered new technology with limited data on reliability.

(32) **Failing System:**
Any system that discharges sewage to a seepage pit, cesspool, drywell, or leaching pit and any system with less than three feet of soil or sand between the bottom of the distribution medium and the saturated soil level or bedrock. In addition, any system posing an imminent threat to public health or safety shall be considered failing.

(33) **Gas Deflecting Baffle:**
An obstructing device on the septic tank outlet that limits the escape of solids that are carried by septic tank

gases.

(34) **Gravel-less Drainfield Pipe:**
A distribution medium consisting of a corrugated distribution pipe encased in a geotextile wrap installed in a trench.

(35) **Greywater:**
Sewage that does not contain toilet wastes.
Liquid waste from a dwelling or other establishment produced by bathing, laundry, culinary operation, and from floor drains associated with these sources are considered greywater.

(36) **Hazardous Waste:**
Any substance which, when discarded, meets the definition of hazardous waste in MN Rules Chapter 7045.

(37) **Holding Tank:**
A watertight tank for storage of sewage until it can be transported to a point of approved treatment and disposal.

(38) **Imminent Threat to Public Health or Safety:**
Situations with the potential to immediately and adversely impact or threaten public health or safety. At a minimum, cesspools, ground surface or surface water discharges and any system causing sewage backup into a dwelling or other establishment shall constitute an imminent threat.

(39) **Individual Sewage Treatment System:**
A sewage treatment system, or part thereof, serving a dwelling, or other establishment, or group thereof, and using sewage tanks or advanced treatment followed by soil treatment and disposal. (40) Invert: The lowest point of a channel inside a pipe.

(41) **Liquid Capacity:**
The liquid volume of a sewage tank below the invert of the outlet pipe.

(42) **Mottling:**
A zone of chemical and reduction activity, appearing as splotchy patches of red, brown or gray in the soil. In subsoils with a color value of four or more, the term mottling also includes soil having matrix colors with a chroma of two or less as described in "Keys to Soil Taxonomy" 5th Edition, 1992 Soil Management Support Services, technical monograph No. 19, which is incorporated by reference. This document is provided by the Agency for International Development, United States Department of Agriculture Soil Conservation Service, Soil Management Support Services. The document was printed by Pocahontas Press, Inc., P.O. Drawer F., Blacksbury, Virginia 24063-1020. It can be found at the Minnesota State Law Library, Judicial Center, 25 Constitution Avenue, St. Paul, MN 55155. This document is not subject to frequent change.

(43) **Mound System:**
A system where the soil treatment area is built above the natural elevation of the soil to overcome limits imposed by proximity to saturated soil or bedrock, or by rapidly or slowly permeable soils.

(44) **New Construction:**
Installing or constructing a new individual sewage treatment system in its entirety; or altering, extending or adding capacity to an existing individual sewage treatment system.

(45) **Notice of Noncompliance:**
A document written and signed by a qualified employee or licensee after a compliance inspection which gives notice that an individual sewage treatment system in not in compliance with these regulations.

(46) **Ordinary High Water Level:**
The boundary of water basins, watercourses, public waters and wetlands, and (1) the ordinary high water level is an elevation delineating the highest water level that has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial; (2) for watercourses, the ordinary high water level is the elevation of the top of the bank of the channel; and (3) for reservoirs and flowages, the ordinary high water level is the operating elevation of the normal summer pool.

(47) **Original Soil:**
Naturally occurring, inorganic soil that has not been moved, smeared, compacted, nor manipulated with construction equipment.

(48) **Other Establishment:**
Any public or private structure other than a dwelling which generates sewage.

(49) **Owner:**
Any person having possession of, control over, or title to property with an individual sewage treatment system.

(50) **Percolation Rate:**
The timed rate of drop of a water surface in a test hole as specified in Section 9.9.

(51) **Permit:**
A building, construction, sanitary, planning, zoning or other such permit issued for new construction, replacement, repair, alteration or extension of an individual sewage treatment system. Permit also means a permit issued for the addition of a bedroom or bathroom on property served by an individual sewage treatment system.

(52) **Permittee:**
Any person who is named on a permit issued pursuant to these regulations.

(53) **Permitting Authority:**
Any unit of government, state agency, or any authorized representative who administers or enforces these regulations through permitting.

(54) **Plastic Limit:**
A soil moisture content below which the soil may be manipulated for purposes of installing a soil treatment system, and above which manipulation will cause compaction and puddling. The soil moisture content at the plastic limit can be measured by American Society for Testing and Materials (ASTM) test number D4318-84.

(55) **Privy:**
An aboveground structure with an underground cavity meeting the requirements of Section 15.5, which is used for the storage or treatment and disposal of toilet wastes, specifically excluding water for flushing and greywater.

(56) **Previously Developed Site:**
Land already containing a dwelling or other establishment.

(57) **Public Health Nuisance:**
Any activity or failure to act that adversely affects the public health.

(58) **Public Waters:**
Any public waters or wetlands as defined in Minnesota Statutes, Section 103G.005, subdivisions 15 and 19, or identified as public waters or wetlands by the inventory prepared pursuant to Minnesota Statutes, Section 103G.201.

(59) **Qualified Employee:**
An employee of the Department who meets the minimum criteria for employment as an ISTS professional and who conducts site evaluations or inspects individual sewage treatment systems as part of employment duties.

(60) **Replacement:**
The replacement of an existing sewage tank, holding tank, dosing chamber, artificial drainage, privy, collector system or soil treatment system.

(61) **Required Absorption Width:**
That width, measured in the direction of the original land slope and perpendicular to the original contours, which is required for the sewage tank effluent to infiltrate into the original soil according to the allowable loading rates in Section 14.6, Table V.

(62) **Restaurants:**
Any place where food is prepared and intended for individual portion service regardless of whether consumption is on or off the premises or whether there is a charge for the food. This definition does not include private homes.

(63) **Saturated Soil:**
The highest elevation in the soil where periodically depleted oxygen levels occur because of soil voids being filled with water. Saturated soil is evidenced by presence of soil mottling or other information.

(64) **Seepage Bed:**
An excavated area larger than 36 inches in width which contains drainfield rock and has more than one distribution pipe.

(65) **Seepage Pit, or Leaching Pit, or Dry Well:**
An underground pit into which a sewage tank discharges effluent and from which the liquid seeps into the surrounding soil.

(66) **Septage:**
Solids and liquids removed during periodic maintenance of an individual sewage treatment system, or solids and liquids which are removed from toilet waste treatment devices or a holding tank.

(67) **Setback:**
A separation distance measured horizontally.

(68) **Septic Tank:**
Any watertight, covered receptacle designed and constructed to receive the discharge of sewage from a building sewer, separate solids from liquid, digest organic matter, and store liquids through a period of detention, and allow the clarified liquids to discharge to a soil treatment system.

(69) **Sewage:**
Any water-carried domestic waste, exclusive of footing and roof drainage and chemically treated hot tub or pool water, from any industrial, agricultural, or commercial establishment, or any dwelling or other structure. Domestic waste includes liquid waste produced by toilets, bathing, laundry, culinary operations, and the floor drains associated with these sources. Animal waste and commercial or industrial waste are not considered domestic waste.

(70) **Sewage Flow:**
Flow as determined by measurement of actual water use of, if actual measurements are not available, by the best available data provided.

(71) **Sewage Tank:**
A watertight tank used in the treatment of sewage and includes, but is not limited to, septic tanks and aerobic tanks.

(72) **Sewage Tank Effluent:**
That liquid which flows from a septic or aerobic tank under normal operation.

(73) **Shoreland:**
Land located within the following distances from public waters: 1000 feet from the ordinary high water mark of a lake, pond or flowage; and 300 feet from a river or stream or the landward extent of a flood plain designated by ordinance on such river or stream, whichever is greater.

(74) **Site:**
The area bounded by the dimensions required for the proper location of the soil treatment system.

(75) **Slope:**
The ratio of the vertical rise or fall to horizontal distance.

(76) **Soil Characteristics, Limiting:**
Those soil characteristics which preclude the installation of a standard system, including evidence of water table or bedrock and percolation rates faster than one-tenth or slower than 60 minutes per inch.

(77) **Soil Textural Classification:**
Soil particle sizes or textural classification as specified in the Soil Survey Manual, Handbook No. 18, United States Department of Agriculture, 1993, incorporated by reference.

(78) **Soil Treatment Area:**
The area of trench, at-grade rock bed, or seepage bed bottom which is in direct contact with the distribution medium of the soil treatment system. For mounds, that area to the edges of the required absorption width and extending five feet beyond the ends of the rock layer.

(79) **Soil Treatment System:**

A system where sewage tank effluent is treated and disposed of into the soil by percolation and filtration, and includes trenches, seepage beds,drainfields, at-grade systems, and mound systems.

(80) **St. Croix River Land Use District:**
Those lands designated by the Commissioner of the Department of Natural Resources as the protected land corridor along the Saint Croix River.

(81) **Standard System:**
An individual sewage treatment system employing a building sewer, sewage tank, and the soil treatment system consisting of trenches, seepage beds, or mounds.

(82) **Supply Pipe:**
Any non-perforated pipe whose purpose is the transport of sewage tank effluent. Supply pipes must meet or exceed the requirements established in these regulations.

(83) **Surface Water Flooding:**
The 100-year flood plain along rivers and streams as defined by the DNR, or in the absence of such data, as defined by the largest flood of record; on lakes, high water levels as determined or recorded by the DNR or, in the case of no DNR record, by local records or experience. Other surface water flooding or high water areas will be determined based on local information.

(84) **Ten-year flood:**
That flood which can be expected to occur, on an average, of once in ten years; or the elevation to which flood waters have a ten percent chance of rising in any given year.

(85) **Toilet Waste:**
Waste commonly disposed of in toilets including fecal matter, urine, toilet paper, and any water used for flushing and specifically excluding sanitary napkins, tampons and disposable diapers.

(86) **Toilet Waste Treatment Devices:**
Privies and other devices including incinerating, composting, biological, chemical, recirculating, or holding toilets.

(87) **Trench:**
An area excavated from 18 to 36 inches in width which contains drainfield rock or other distribution medium.

(88) **Valve box:**
A watertight structure designed for alternate distribution of effluent to a soil treatment system.

(89) **Water Table:**
The highest elevation in the soil where all voids are filled with water, as evidenced by presence of water or soil mottling or other information.

(90) **Watertight:**
A device constructed so that no water can get into or out of the device except through designed inlets and outlets.

SECTION 3. Administration

3.1
This chapter shall apply and be in effect in all areas in Washington County other than cities and towns that have adopted ordinances that comply with Minnesota Statute Section 115.55 and are as strict as this Chapter. Pursuant to Chapter One, the Washington County Department of Health, Environment and Land Management shall be the Administrator of these regulations.

(1) The department or its agent shall be qualified and certified by the Minnesota Pollution Control Agency as competent in the design, evaluation, and inspection of individual on-site sewage treatment systems.

(2) If the department finds that, by reason of exceptional circumstances, the strict enforcement of any provisions of this Chapter would cause undue hardship or that strict conformity with the standards would be unreasonable, impractical, or not feasible under the circumstances, the Department may permit modifications in individual cases based on conditions it may prescribe for prevention, control or abatement of pollution.

(3) Consistent with the procedures in Chapter One, Section 6.1 (1), the Washington County Board of Adjustment and Appeals shall hear and decide appeals of any order, decision or determination made by the department regarding the enforcement of this Chapter. Appeals of any administrative decision or determinatior may be filed by any person, county department, or township.

(4) Consistent with the procedures in Chapter One, Section 6.1 (2), the Washington County Board of Adjustment and Appeals shall hear and decide all requests for variance to the requirements of this Chapter. Pursuant to Minnesota Rule 7080.0305, variances to decrease the three (3) foot of vertical separation required beneath the distribution medium and the saturated soil or bedrock must be approved by the Commissioner of the Minnesota Pollution Control Agency in accordance with Minnesota Rule 7080.0030, subp. 3.

3.2
The standards in this chapter are not intended to cover waste systems treating industrial or animal waste or other waste that may contain hazardous materials.

3.3
All individual sewage treatment systems installed subsequent to the adoption of this Chapter and all alterations extensions, modifications or repairs to existing systems irrespective of the date of original installation shall be regulated in accordance with all requirements of this Chapter.

3.4
Any existing system which is a cesspool or leaching pit or which shows evidence of sewage discharge to surface water, sewage discharge to ground surface, sewage backup, or any other situation with the potential to immediately and adversely affect or threaten public health or safety is hereby declared to be a public health nuisance and shall be considered an imminent threat to public health and safety and shall be repaired, upgraded, replaced or its use discontinued within thirty (30) days of notice and order to comply by the department. Any further discharge of effluent must be stopped immediately (by such methods as reducing or stopping all water use or pumping the tank as necessary) until such time as the system is corrected.

3.5
Any individual sewage treatment system or component thereof, irrespective of the date of original installation, which is not located, constructed, installed or maintained in accordance with the provisions of this Chapter

shall be replaced or otherwise brought into compliance within ninety (90) days of notice and order to comply by the department. An existing system that is not otherwise considered an imminent threat to public health and which was constructed under a permit need not be upgraded, repaired, replaced, or its use discontinued notwithstanding the fact that at the time of a compliance inspection, there appears to be less than the required three foot separation between the system bottom and mottled soil.

3.6
Individual sewage treatment systems serving establishments or facilities licensed or otherwise regulated by Washington County shall conform to the requirements of this Chapter.

3.7
Industrial wastewater systems and individual sewage treatment systems serving more than twenty (20) persons (1200 gallons per day) are regulated by the United States Environmental Protection Agency as Class V. injection wells under Code of Federal Regulations Title 40 Part 144.

3.8
When a single individual sewage treatment system, or group of individual sewage treatment systems, is located on adjacent properties and under single ownership, the owner or owners shall make application for and obtain a state disposal system permit from the Minnesota Pollution Control Agency if the individual sewage treatmen system or group of systems is designed to treat an average design flow of greater than 10,000 gallons per day.

3.9
Any new or existing system which discharges to surface waters or the ground surface must obtain either an NPDES or an SDS permit from the Minnesota Pollution Control Agency and shall comply with all NPDES or SDS requirements.

3.10
Any individual sewage treatment system requiring approval by the State of Minnesota shall also comply with this Chapter and all local codes and ordinances.

3.11
Where work requiring a permit under this Chapter has commenced without first having obtained a permit, work shall be ordered to stop until all permit requirements have been met and a permit for installation of a system has been approved.

3.12
To enforce this Chapter, the department or its authorized agent my enter a building, property or a place where there is reason to suspect a system is failing to properly treat or dispose of sewage.

3.13
Fees for permits, inspections, or other services rendered under this Chapter shall be established by the Washington County Board of Commissioners.

SECTION 4. Prohibitions

4.1

Sewage, sewage tank effluent, or seepage from a soil treatment system shall not be discharged into any well or boring as defined in MN Rules Chapter 4725 or any other excavation in the ground.

4.2
Footing or roof drainage and chemically treated hot tub and pool water shall not enter any part of the system.

4.3
Products containing hazardous waste and hazardous substances must not be discharged to a system other than in normal amounts of household products and cleaners designed for household use. Substances not intended for use in household cleaning, including solvents, pesticides, flammables, photo finishing chemicals, and dry cleaning chemicals must not be discharged to the system.

4.4
Unless specifically permitted by the Minnesota Pollution Control Agency, sewage, sewage tank effluent or seepage from a soil treatment system shall not be discharged to the ground surface or to surface water.

4.5
Uncontaminated clear water waste from geothermal heat pump installations shall not be introduced into individual sewage treatment systems. Such waste may be discharged to the ground surface or to a body of water; however, in no case shall surface discharge be permitted where such discharge encroaches on adjoining property or public way. Where subsurface disposal is provided, such installation shall be separated from the required sewage treatment site and shall be designed and sized as prescribed for a standard soil treatment system.

4.6
Cesspools, seepage pits, dry wells and leaching pits shall not be installed and shall not remain in operation.

4.7
Installation of systems in low swampy areas, drainage swales, or areas subject to recurrent flooding is prohibited.

4.8
Systems shall not be located within utility or drainage easements nor within dedicated public or private rights-of-way without proper approvals.

SECTION 5. Permits

5.1
No construction shall be allowed until the permit required for the individual septic system has been issued.

5.2
No additions, enlargements, improvements, or remodeling involving fifty (50) percent or more of the structure, or alterations that would affect the water use, such as bedrooms, bathrooms or additions to living space (excluding such areas as screen porches, entry ways, decks, attics, patios, nonhabitable storage space) shall be allowed until the sewage treatment system has been determined to be both adequate and conforming or a permit for a new treatment system has first been issued.

5.3
Permits shall be required for individual sewage treatment systems as follows:

(1) All new installations of sewage tanks, treatment systems and components thereof.

(2) All repair, extension, replacement or modification of existing systems and components.

(3) Any change in use of a facility served by an existing sewage treatment system.

5.4
Permits shall not be required for normal routine inspection and maintenance of approved individual septic treatment systems.

5.5
Permit applications shall be made in writing on forms provided by the department and shall contain data including, but not limited to, the following:

(1) Correct legal description of the property on which the proposed work is to take place.

(2) Site plan, drawn to scale, showing the location of all proposed and existing structures, property lines, water supply wells within 100 feet, terrain features such as blufflines, water bodies or water ways, buried utilities, easements and other unique features of the site.

(3) Soil test date, including soil boring logs, percolation test data with field notes (where required) and location and identification of test area.

(4) Plans and details of the proposed installation of work, including engineering data and final design.

(5) Building plans showing existing and proposed room arrangement and uses.

(6) For other than dwellings, calculated or measured water use rates, occupancy and occupant load.

(7) In certain cases, a property survey may be required identifying property characteristics and including such items as elevations, contour lines, normal high water marks, and ten (10) year and one hundred (100) year flood elevations.

(8) Evidence of compliance with state or other jurisdiction regulations where applicable.

5.6
No permit will be issued until a detailed system design is submitted for the current proposed construction, including site plan and at least one current soil boring if there is reason to believe soil conditions have been altered since the original soil testing.

5.7
Permits shall be valid upon issuance and shall continue for a period of one (1) year. After one (1) year, the permit may be renewed if no changes are proposed. Such renewal shall require reapplication and payment of the established fee.

5.8
Permits issued under this Chapter may be revoked upon written notice by the department when such permit has been issued based on erroneous or inaccurate data supplied by the applicant or erroneous interpretation of the law by a building official.

SECTION 6. Inspections

6.1
Inspections as required to determine compliance with this Chapter shall be performed by the department or its authorized agent under the following circumstances:

(1) Site inspections to verify and evaluate soil and site conditions and to determine the suitability of soils and system design.

(2) Necessary investigation to determine compliance of existing systems at the time of remodeling, alteration o additions.

(3) For all new ISTS construction or replacement.

(4) Mound systems require a minimum of three construction inspections:

(A) When the original soil under the mound has been roughened, but prior to placement of the sand fill. Enough of the proposed sand fill must be present to be viewed.

(B) After placement of rock and piping, but prior to cover.

(C) When job is completed.

6.2
Installation inspections shall be made prior to any work having been covered by backfill.

6.3
The licensed installer shall be responsible to notify the department a minimum of twenty-four (24) hours prior to the time work is ready for inspection or reinspection.

6.4
Work which is backfilled prior to required inspection may be ordered to be uncovered whenever necessary to determine compliance.

6.5
If upon inspection any part of the system is determined not to be in compliance with this Chapter, written notice shall be provided by the department indicating the deficiency and the required corrections. Noted deficiencies shall be properly corrected and reinspected before any other work on the project is continued.

6.6
No system shall be placed or replaced in service until final inspection has been completed and the system

installation has been approved.

6.7
The owner or occupant of a property shall be responsible to provide access at reasonable time to the department or its agent for the purpose of performing inspections required under this Chapter.

6.8
The Contractor, upon completion of installation, shall file with the department as built drawings indicating the location of system components dimensioned from a permanent reference point.

6.9
If an inspection is conducted as a part of preparation of the disclosure required by Minnesota Statutes 115.55, subd. 6 and such inspection is conducted by a party who is not the property owner, such party must be licensed in accordance with MPCA rules and regulations and the notice of compliance or noncompliance provided to the property owner must also be provided to Washington County within thirty (30) days of the inspection.

SECTION 7. General Requirements

7.1
An individual septic treatment system, or systems, shall be designed to receive all sewage from the dwelling, building or other establishment served.

7.2
Sewage treatment systems and each component thereof shall be located and installed to insure that, with proper maintenance, it will function in a sanitary manner and will not create a nuisance nor contaminate any domestic water supply well. Location shall consider lot size and configuration, proposed structures and other improvements, topography, surface drainage, soil conditions, depth to ground water, geology, existing and proposed water supply wells, accessibility for maintenance, and potential expansion or replacement of the system.

7.3
The design, construction, and location of, and the materials for use in building sewers shall be in accordance with the Minnesota State Building Code, chapter 1300, which incorporates by reference portions of the Minnesota Plumbing Code, chapter 4715, and specific provisions of the Minnesota rules relating to wells and borings, chapter 4725.

7.4
An individual sewage treatment system defined as a collector, an alternative system, or a system intended to serve other establishments shall not be installed unless a water meter is provided to measure the flow to the treatment system. For metered systems that have sewage tank effluent pumped to a soil treatment area, an electrical event counter must also be installed.

SECTION 8. Site Evaluation

8.1
Prior to the issuance of a building permit for new construction, remodeling or alterations that would affect water use, such as bedrooms, bathrooms or additions to living space; or the issuance of a permit to install, upgrade, repair or alter an individual sewage treatment system; or approval for subdivision of land, a site evaluation shall be made of all proposed sites for sewage treatment systems shall be completed by the applicant and reviewed and approved by the department. Such site evaluation shall consist of a preliminary and field evaluation.

8.2
A preliminary evaluation shall consist of:

(1) Flow determination for the dwelling or other establishment;

(2) The investigation of the proposed or existing location of water supply wells within 100 feet of the proposed ISTS, existing and proposed buildings on the lot, and existing and proposed buried water pipes within 50 feet of the proposed system;

(3) Easements on the lot;

(4) Ordinary high water level of public waters;

(5) Ten-year floodplain designation and flooding elevation from published data as available or from data which is acceptable to and approved by the permitting authority or the DNR;

(6) Property lines;

(7) All required setbacks from the system;

(8) The soils map unit, applicable soil characteristics, and soil suitability as determined by soil borings and percolation tests for each proposed site or installation;

(9) Legal description and lot dimensions; and

(10) Names of property owners.

8.3
A field evaluation shall consist of:

(1) Identifying lot lines, lot improvements, and easements;

(2) A description of the percent and direction of the slope at the proposed system location, vegetation type, any evidence of disturbed or compacted soil or flooding or run-on potential and landscape position;

(3) Depth to the highest known or calculated ground water table or bedrock;

(4) The existence of lowlands, local surface depressions, and rock outcrops;

(5) All legal setback requirements from existing and proposed buildings; property lines; sewage tanks; soil

treatment systems; water supply wells; buried water pipes and utility lines; the ordinary high water level of public waters; and the location of all soil treatment systems and water supply wells on adjoining lots within 100 feet of the proposed soil treatment system, sewage tank and water supply well.

8.4
A written report on the site evaluation shall be prepared covering, at a minimum, the following:

(1) All of parts 8.2 and 8.3;

(2) Dates of preliminary and field evaluations;

(3) A map drawn to scale or dimension, with a north arrow, and including the following:

(A) A horizontal and vertical reference point of soil observation and percolation tests and distance to all required setbacks, lot improvements, easements, ordinary high water mark of public waters, property lines, direction and percent slope;

(B) The location of any unsuitable, disturbed/compacted areas; and

(C) The access route for tank maintenance.

(4) Estimated depth of seasonally saturated layer, bedrock, or flood elevation, if appropriate;

(5) Proposed elevation of the bottom of the soil treatment system;

(6) Final soil sizing factor;

(7) Anticipated construction-related issues; and

(8) Name, address, telephone number and signature of the individual conducting the site evaluation.

SECTION 9. Soil Testing

9.1
Applicants for sewage treatment system permits, site or subdivision approvals will be required to submit soil test data derived from soil borings and percolation tests for each proposed site or installation. The minimum testing shall be that necessary to verify suitable conditions for two complete soil treatment systems. Large systems designed for 1,200 gallons per day or more shall require a hydrogeologic investigation in accordance with Section 15.7 (3).

9.2
All testing shall be conducted in accordance with the requirements of this Chapter and shall be done by qualified personnel, certified under the MPCA training and certification program and licensed by the MPCA.

9.3
All proposed sites for sewage treatment systems shall be protected by fence or other methods as necessary to

avoid excavations, construction equipment or other traffic that could affect the soil conditions.

9.4
For subdivision testing, enough soil borings must be done to assure that suitable soils exist for each lot for long-term sewage treatment. Percolation tests are not required unless the permeability cannot be estimated or there is reason to believe the soil is not original or has been compacted.

9.5
Complete testing on each individual lot will be required prior to permit issuance independent of any prior approved subdivision testing. A minimum of four (4) satisfactory soil borings outlining an area of 5,000 square feet are required. Larger areas may be required where conditions of use, soils, topography or vegetation require.

9.6
Where soil tests require a mound, testing and design must clearly show suitable area for installation of two (2) complete mounds. Where site conditions are such that the only backup mound will likely be disturbed, the Department, at its discretion, may require both mounds to be constructed at once.

9.7
Soil borings shall be made as follows:

(1) Borings shall be by auger or excavation and shall be staked and protected until notification that the field evaluation has been completed.Flite augers which are continuous or disturb extracted soil samples are not allowed. Borings shall be made to a depth of at least three (3) feet deeper than the bottom of the proposed system or until bedrock or a water table is encountered, whichever is less.

(2) Any evidence of disturbed or compacted soil must be disclosed and may result in the prohibition of utilizing that test area.

(3) Particular effort shall be made to determine the highest known water table by recording the first occurrence of mottling observed in the hole, or if mottling is not encountered, the open holes in clay or loam soils shall be observed after standing undisturbed a minimum of sixteen (16) hours, and depth to standing water, if present, shall be measured.

9.8
A soil description shall be written for each soil observation at the proposed site. Soils should be evaluated under adequate light conditions with the soil in a moist state and including the following:

(1) The depth of each soil horizon measured from the ground surface. Soil horizons are differentiated by changes in soil structure, soil texture, soil color, mottling, bedrock, or any other characteristic which may affec water percolation or treatment of effluent.

(2) The soil matrix and mottled color described per horizon by the Munsell Soil Color Charts, 1992 Revised Edition, which is incorporated by reference. This document is available from Macbeth Division, Kollmorgen Instruments Corporation, Munsell Color, PO Box 230, Newburgh, New York 12551-0230. It can be found at the Minnesota State Law Library, Judicial Center, 25 Constitution Avenue, St. Paul, MN 55155. This document is not subject to frequent change.

(3) The soil texture described using the United States Department of Agriculture (USDA) soil classification

system as modified here:

Clay	= Clay, sand clay, silty clay
Clay loam	= Clay loam, sandy clay loam, silty clay loam
Loam	= Loam
Sandy loam	= sandy loam
Silt loam	= Silt loam, silt
Loamy sand	= loamy sand
Course sand	= course sand
(Medium) sand	= (Medium) sand
Find sand	= Fine and very find sand

9.9
After soil borings have outlined the minimum area of suitable soils, percolation tests shall be made. The only exception to this requirement is for sandy soils clearly in the 5 mpi range. The design for sizing of systems is such soils shall be 1.27 square feet per gallon. The requirements for percolation tests are:

(1) Each test hole shall be six to eight inches in diameter, have vertical sides, and be bored or dug to a depth of the bottom of the proposed individual sewage treatment system. Soil texture descriptions shall be recorded noting depths where texture changes occur.

(2) The bottom and sides of the hole shall be carefully scratched to remove any smearing and to provide a natural soil surface into which water may penetrate.

(3) All loose material shall be removed from the bottom of the test hole and two inches of one-fourth to three-fourths inch gravel shall be added to protect the bottom from scouring.

(4) The hole shall be carefully filled with clear water to a minimum depth of twelve (12) inches over the soil at the bottom of the test hole and maintained for no less than four hours. Failure to adequately saturate the test hole may result in rejection of the test.

(5) The soil shall then be allowed to swell for at least sixteen (16) but no more than thirty (30) hours. In sandy soils, the saturation and swelling procedure shall not be required and the test may proceed if one filling of the hole has seeped away in less than ten minutes.

(6) Measure the percolation rate as follows:

> (A) In sandy soils, adjust the water depth to eight inches over the soil at the bottom of the test hole. From a fixed reference point, a drop in water level shall be measured in inches to the nearest one-sixteenth (1/16) inch at approximately ten minute intervals. Measurement can also be made by determining the time it takes for the water level to drop one inch from an eight inch reference point. If eight inches of water seeps away in less than ten minutes, a shorter interval between measurements shall be used, but in no case shall the water depth exceed eight inches. The test shall continue until three consecutive percolation rate measurements vary by a range of no more than ten percent.

(B) In other soils, adjust the water depth to eight inches over the soil at the bottom of the test hole. From a fixed reference point, the drop in water level shall be measured in inches to the nearest one-sixteenth (1/16) inch at approximately 30 minutes intervals, refilling between measurements to maintain an eight inch starting head. The test shall continue until three consecutive percolation rate measurements vary by a range of no more than ten percent. The percolation rate can also be made by observing the time it takes the water level to drop one inch from an eight-inch reference point if a constant water depth has been maintained for at least four hours prior to the measurement.

(7) Calculate the Percolation Rate by dividing the time interval by the drop in water level to obtain the percolation rate in minutes per inch. The percolation rates which are within the ten percent provision determined for each test hole shall be averaged to determine the final percolation rate for that hole.

(8) The slowest final percolation rate for all holes within the soil treatment area shall be used for design.

(9) A percolation test shall not be run where frost exists below the depth of the proposed soil treatment system.

SECTION 10. Sewage Flow Determination

10.1
Where the construction of additional bedrooms, the installation of mechanical equipment, or other factors likely to affect the operation of the system can be reasonable anticipated, the installation of a system for the anticipated need shall be required.

10.2
For dwellings, the average daily sewage flow and the measured percolation rate of the soil shall be used to size the soil treatment system. Acceptable methods for estimating sewage flow are given in Table I. The minimum daily sewage flow estimated for any dwelling shall provide for at least two bedrooms. For multiple residential units, the estimated daily sewage flow shall consist of the sum of the flows of each individual unit. If a greywater system is employed, estimated sewage flow shall equal sixty (60) percent of the amount provided in Table I.

Table I

Number of Bedrooms	Gallons per Day
2	300
3	450
4	600
5	750
6	900

10.3
For other establishments, average design flow shall be used to size soil treatment systems. Maximum design flow shall be used to size sewage tanks. Design flows shall be calculated using estimated or measured values

for other establishments according to the following:

(1) Estimated average and maximum design flows: the best available data as provided by the department shall be used if estimating the average and maximum design flows.

(2) Measured average and maximum design flows:

(A) The average design flow shall be determined by averaging the measured daily flows for a consecutive seven-day period in which the establishment is at maximum capacity or use; and

(B) The maximum design flow shall be the anticipated peak daily flow.

SECTION 11. Sewage Tanks

11.1
All tanks, regardless of material or method of construction must:

(1) Be watertight;

(2) Be designed and constructed to withstand all lateral earth pressures under saturated soil conditions with the tank empty;

(3) Be designed and constructed with adequate tensile and compressive strength to withstand a minimum of seven feet of saturated earth cover above the tank top and manhole cover;

(4) Not be subject to corrosion or decay;

(5) Have the manufacturer's name, model number, and tank capacity in gallons permanently displayed on the tank above the outlet pipe;

(6) Not be constructed on site when saturated soil conditions during construction are closer than three inches to the bottom of the excavation;

(7) Be protected against flotation under high water table conditions; and

(8) Have a written and graphic label affixed to maintenance hole covers of sewage tanks warning of the hazardous conditions inside the tanks.

11.2
All tanks, regardless of material or method construction, shall conform to the following criteria:

(1) The liquid depth of any septic tank or compartment thereof shall not be less than 24 inches.

(2) No tank or compartment thereof shall have an inside horizontal dimension less than 24 inches.

(3) Baffles shall be installed at each inlet and outlet of the tank and each compartment.

(4) The space in the tank between the liquid surface and the top of the inlet and outlet baffles shall be not less than 20 percent of the total required liquid capacity, except that in horizontal cylindrical tanks, this space shall be not less than 15 percent of the total required liquid capacity.

(5) Inlet and outlet baffles shall be constructed of acid resistant concrete, acid resistant fiberglass, or plastic not subject to corrosion or decay. Inlet baffles not conducive to the movement of solids shall not be used.

(6) Baffles must be integrally cast with the tank, affixed with a permanent waterproof adhesive, or affixed with stainless steel connectors, top and bottom. Sanitary tees, which are used as baffles, shall be affixed to the inlet or outlet pipes with a permanent waterproof adhesive.

(7) The inlet baffle shall extend at least six inches but not more than 20 percent of the total liquid depth below the liquid surface and at least one inch above the crown of the inlet sewer.

(8) The outlet baffle and the baffles between compartments shall extend below the liquid surface a distance equal to 40 percent of the liquid depth except that the penetration of the indicated baffles or sanitary tees for horizontal cylindrical tanks shall be 35 percent of the total liquid depth. They also shall extend above the liquid surface as required in 11.2(4). In no case shall they extend less than six inches above the liquid surface. Gas deflecting baffles shall be installed on the outlet of the final septic tank which services an other establishment.

(9) The top of the inlet baffle may extend through the top of the tank or maintenance hole cover. The cap must be easily accessible.

(10) In a single compartmented tank, the inlet invert shall be at least two inches above the outlet invert.

(11) The inlet and outlet shall be located opposite each other along the axis of maximum dimension. The horizontal distance between the nearest points of the inlet and outlet baffles shall be at least four feet.

(12) Inlet baffles, other than sanitary tees, shall be no less than six inches or no more than 12 inches from the end of the inlet pipe to the nearest point on the baffle. Outlet baffles, other than sanitary tees, shall be six inches measured from beginning of the outlet pipe to the nearest point on the baffle. Sanitary tees used as inlet or outlet baffles shall be at least four inches in diameter.

11.3
Access to a septic tank shall be as follows:

(1) There shall be one or more manholes, at a minimum of 20 inches least dimension, and located within six feet of all walls of the tank. The manhole shall extend through the tank cover to a point within six (6) inches of finished grade. If the manhole is covered with less than six inches of soil, the cover must be secured to prevent unauthorized access.

(2) There shall be an inspection pipe of at least four inches in diameter over both the inlet and outlet baffles. The inspection pipe shall extend through the tank cover or the maintenance hole cover, be secured, and be capped flush with or above the finished grade. A downward projection of the center line of the inspection pipe shall be directed in line with the center line of the inlet or outlet device.

(3) An inspection pipe at least four inches in diameter must be located between the inlet and outlet baffles for the purpose of evaluating scum and sludge accumulations. The inspection pipe must extend through either the

tank cover or manhole cover and must be capped flush with or above finished grade.

11.4
A septic tank larger than 3,000 gallons shall be divided into two or more compartments.

(1) When a septic tank is divided into two compartments, the volume of the first compartment shall be between one-half (1/2) and two-thirds (2/3) of the total tank volume.

(2) When a septic tank is divided into three or more compartments, one (1/2) of the total volume shall be in the first compartment and the other half equally divided in the other compartments.

(3) Connections between compartment shall be baffled to obtain effective retention of scum and sludge. The submergence of the inlet and outlet baffles of each compartment must be as specified in 11.2 (7) and (8).

(4) Adequate venting shall be provided between compartments by baffles or by an opening of at least fifty (50) square inches near the top of the compartment wall.

(5) Adequate access to each compartment shall be provided by one or more maintenance holes, at least 20 inches in dimension, and located within six feet of all walls of the tank. The maintenance hole shall extend through the top of the tank compartment cover to a point between zero and a six (6) inch depth below finished grade. If the maintenance hole is between zero and six inches below finished grade, the maintenance hole cover must be secured to prevent unauthorized access.

11.5
Where more than one tank is used to obtain the required liquid volume, the tanks shall be connected in series. No more than four (4) tanks in series can be used to obtain the required liquid volume. The first tank shall be equal to or larger than any subsequent tank in the series.

11.6
The outlet pipe extending from the septic tank must not be of cast iron, but must be of sound and durable construction, not subject to corrosion or decay. The outlet pipe must meet the strength requirements of American Society for Testing and Materials (ASTM), schedule 40 plastic pipe and must be supported in a manner that there is no deflection during the backfilling and subsequent settling of the soil between the edge of the septic tank and the edge of the excavation. The soil around the pipe must be compacted to al least original density for a length of three feet beyond the edge of the tank excavation.

11.7
Any liquid depth which is greater than 78 inches shall not be used when calculating the septic tank capacity. Liquid capacity of septic tanks is described as follows:

(1) For dwellings there shall be two septic tanks in series with the liquid capacity based on the number of bedrooms contemplated in the dwelling; such tanks shall be at least as large as the capacities in Table II. The only exception to this requirement is for the upgrade of an existing conforming system if the primary tank capacity is met and there is no garbage disposal or sewage pump. System replacement shall require two tanks in series.

Table II

Number of Bedrooms	Tank Liquid Capacities (Gallons)
Two or less	1,000 and 500
Three or Four	1,000 and 1,000
Five or Six	1,500 and 1,000
Seven, Eight or Nine	2,000 and 1,000
Ten or More	Septic tank shall be sized as an other establishment with the second tank in series being at least 50 percent of the capacity of the first tank.
Multiple family dwelling containing two or more units	Size shall be the sum of the individual dwelling unit requirements

(2) The liquid capacity of septic tanks serving other establishments shall be sufficient to provide a sewage detention period of not less than 36 hours in the tank for maximum design flows of less than 1,500 gallons per day, but in no instance shall the liquid capacity be less than 750 gallons. For maximum design flows greater than 1,500 gallons per day, the minimum liquid capacity shall equal 1,125 gallons per day plus 75 percent of the maximum design flow. For restaurants and laundromats, twice the liquid capacity detailed above must be provided. For laundromats, the outlet baffle of the septic tank must be submerged to a depth of 50 percent.

11.8
A sewage pump must not deliver sewage to a one tank system if the pump cycle delivers more than one percent of the liquid capacity of the tank. For systems with multiple tanks, at least two tanks in series must be used, each having at least the liquid capacity specified in this Section. The volume of sewage delivered in each pump cycle must not exceed five percent of the liquid capacity of the first tank.

11.9
The sewage tank shall be placed so that it is easily accessible for the removal of liquids and accumulated solids. The soil cover over a tank shall not exceed five (5) feet. The sewage tank shall be placed on firm and settled soil capable of bearing the weight of the tank and its contents. Sewage tanks shall be setback as specified in Table III. Sewage tanks shall not be placed in areas subject to flooding or in floodplains delineated by local regulations adopted in compliance with MN Rules, Chapter 6120 or in areas for which regional flood information is available from the DNR, except that in areas where ten year flood information is available from and/or approved by the DNR, sewage tanks may be installed as an alternative system in accordance with all provisions of Section 15.3.

Table III Minimum Setback Distances (Feet)

Feature	Sewage Tank	Soil Treatment Area
Water Supply Well less than 50 feet deep and not encountering at least ten feet of impervious material.	50	100
Any other water supply well or buried water suction pipe	50	50
Buried pipe distributing water under pressure	10	10

Occupied buildings and buildings with basements or crawl spaces	10	20
Non-occupied structures	5	10
Property lines	10*	10*
Above ground swimming pools	10	10
In ground swimming pools	10	10
The Ordinary High Water Mark of:		
Natural Environment Lakes and Streams	150*	150*
Recreation Development Lakes and Streams	75*	75*
General Development Lakes and Streams	75*	75*
All unclassified waters	75*	75*
St. Croix River Rural Districts	150*	150*
St. Croix River Urban Districts	100*	100*
Blufflines:		
St. Croix River Blufflines	40*	40*
Shoreland Blufflines	20*	20*
** These standards may be modified through the variance process.*		

11.10
Aerobic tank treatment systems shall comply with the general requirements for sewage tanks set forth in this Chapter, and with the following:

(1) The treatment system including each individual unit or compartment shall be easily accessible for inspection and maintenance and shall be provided with secured covers.

(2) Aerobic tanks shall comply with National Sanitation Foundation Standard (NSF) No. 40 (November 1990) which is incorporated by reference. Effluent quality shall meet or exceed NSF Class II standards.

(3) No additional reduction in soil treatment or absorption area shall be allowed with the use of an aerobic tank.

(4) An effective maintenance contract, approved by the permitting authority, shall be maintained at all times.

SECTION 12. Distribution of Effluent

12.1
Supply pipes must be protected from freezing where the pipe passes under driveways, sidewalks, roadways, or other areas where deep frost penetration is expected.

12.2
Gravity Distribution.

(1) Serial distribution must be used to distribute effluent to individual trenches in a soil treatment system unles the necessary elevation differences between trenches for drop boxes cannot be achieved by natural topography or by varying the excavation depths, in which case parallel distribution shall be used. If drop boxes are used, they must meet the following standards:

(A) The drop box shall be watertight and constructed of durable materials not subject to corrosion or decay.

(B) The invert of the inlet pipe shall be at least one inch higher than the invert of the outlet pipe to the next drop box.

(C) The invert of the outlet pipe to the next trench shall be no greater than two inches higher than the crown of the outlet pipe of the trench in which the box is located.

(D) When sewage tank effluent is delivered to the drop box by a pump, the pump discharge shall be directed against a wall or side of the box on which there is no outlet.

(E) The drop box shall be covered by a minimum of six (6) inches of soil and it shall be placed on firm and settled soil.

(F) An inspection pipe at least 4 inches in diameter must be provided and capped flush with or above finished grade.

(2) Systems using valve boxes shall comply with the following requirements:

(A) The valve boxes shall be watertight and constructed of durable materials not subject to corrosion or decay.

(B) The invert of the inlet pipe shall be at least one inch higher than the inverts of the outlet pipes to the trenches.

(C) When sewage tank effluent is pumped to a valve box, either a baffle wall must be installed in the valve box or the pump discharge must be directed against a wall or side of the box on which there is no outlet. the baffle must be secured to the box and extend at least one inch above the crown of the inlet pipe.

(D) The valve box shall be covered by a minimum of six (6) inches of soil and it shall be placed on firm and settled soil.

(E) An inspection pipe at least 4 inches in diameter must be provided and capped flush with or above the finished grade.

(3) Distribution boxes must meet the following standards:

(A) The box must be watertight and must be constructed of durable materials not subject to corrosion or decay.

(B) The distribution box shall be covered by a minimum of six (6) inches of soils and it shall be

placed on firm and settled soil. An inspection pipe must be provided and capped flush with or above the finished grade.

(C) The inverts of all outlets must be set and maintained at the same elevation.

(D) The inlet invert must be either at least one inch above the outlet inverts or be sloped such that an equivalent elevation above the outlet invert is obtained within the last eight feet of the inlet pipe.

(E) Each drainfield trench line must be connected separately to the distribution box and must not be subdivided. Distribution boxes must not be connected to one another if each box has distribution pipes.

(F) When sewage tank effluent is delivered by pump, either a baffle wall must be installed in the distribution box or the pump discharge must be directed against a wall or side of the box on which there is no outlet. The baffle must be secured to the box and must extend at least one inch above the crown of the inlet pipe.

(4) Distribution Pipes.

(A) Distribution pipes used in trenches or beds for gravity distribution must be at least four inches in diameter and must be constructed of sound and durable material not subject to corrosion or decay or to loss of strength under continuously wet conditions. Distribution pipes must have a load bearing capacity of not less than 1,000 pounds per lineal foot.

(B) Distribution pipes used for gravity distribution must have one or more rows of holes of no less than one-half (1/2) inch in diameter spaced no more than 40 inches apart. Holes must be spaced to prevent failure due to loads.

(C) The distribution pipes for gravity distribution must be laid level or on a uniform slope away from the distribution device of no more than four inches per 100 feet.

(D) Gravity distribution pipes in seepage beds must be uniformly spaced no more than five feet apart and not more than 30 inches from the side walls of the seepage bed.

12.3
Pressure Distribution.

(1) Pressure distribution must be used for the following soil treatment systems:

(A) All mound systems;

(B) All at-grade systems; and

(C) Systems where the soil percolation rate is 0.1 to five minutes per inch if the effluent is pumped to a seepage bed or to trenches that are all at the same elevation.

(2) Distribution pipes used for pressure distribution must be constructed of sound and durable material not

subject to corrosion or decay or to loss of strength under continuously wet conditions.

(3) All pipes and associated fittings used for pressure distribution must be properly joined together. The pipe and connections must be able to withstand a pressure of at least 40 pounds per square inch.

(4) Perforations must be no smaller than 3/16 inch diameter and no larger than one-quarter (1/4) inch diameter. The number of perforations, perforation spacing and pipe size for pressure distribution laterals must be as shown in Table IV. The friction loss in any individual perforated lateral must not exceed 20 percent of the average head pressure on the perforations.

Table IV
Maximum Allowable Number of One-Fourth Inch Diameter, or Smaller Perforations Per Lateral

Pipe Diameter -- Normal and Inside				
Perforation Spacing in Feet	1 inch	1¼ inch	1½ inch	2 inches
	1.049	1.380	1.610	2.067
2.5	8	14	18	28
3	8	13	17	26
3.3	7	12	16	25
4	7	11	15	23
5	6	10	14	22

(5) Perforation holes must be drilled straight into the pipe and not at an angle. The perforated pipe laterals mus be installed level with the perforations downward. Perforation holes must be free of burrs.

(6) Laterals must be spaced no further than 60 inches apart in seepage beds and mound rock beds and must be spaced no further than a horizontal distance of thirty (30) inches from the outside edge of a drainfield rock layer.

(7) Laterals must be connected to a header or manifold pipe that is of a diameter such that the friction loss in the header or manifold will be no greater than five percent of the average head at the perforations. The header or manifold pipe must be connected to the supply pipe from the pump.

(8) Perforated laterals must be designed and installed in such a way that no perforations are located closer than 12 inches from the edge of thedrainfield rock.

SECTION 13. Dosing of Effluent

13.1
A dosing device is not necessary in all situations but, where used, shall comply with the following requirements:

(1) The dosing chamber shall be watertight and constructed of sound and durable materials not subject to

excessive corrosion or decay, vented, and must be designed and constructed to withstand lateral pressures when the tank is empty.

(2) There shall be one or more maintenance holes, at least 20 inches least dimension and located directly above the dosing device. The maintenance hole shall extend through the dosing chamber cover to final grade and shall be so constructed as to prevent unauthorized entry.

(3) The dosing chamber shall either include an alternating two-pump system or have a minimum capacity of 500 gallons or 100 percent of the average design flow, whichever is greater.

(4) A dosing device must employ an alarm device to warn of failure.

(5) Pumps shall be elevated from the bottom of the dosing chamber to protect the pump from settled solids. The pump, pump controls, and pump discharge line shall be installed so as to be accessible for servicing without entering the dosing chamber.

(6) Electrical installations shall comply with applicable laws and ordinances including the latest codes, rules and regulations of public authorities having jurisdiction and with part 1315.0200, incorporating the National Electrical Code.

13.2
Dosing device for gravity distribution.

(1) Where a dosing device is employed, a pump or siphon shall deliver the dose to the soil treatment system for gravity distribution over the soil treatment area.

(2) For dwellings, the dosing device shall discharge at least 600 gallons per hour, but no more than 2,700 gallons per hour.

(3) For other establishments, the dosing device should discharge at a rate at least ten percent greater than the water supply flow rate but no faster than the rate at which effluent will flow out of the distribution device.

(4) If the dosing device is a siphon, a maintenance inspection shall be made every six months by the owner or the owner's agent. The siphon shall be maintained in proper operating condition.

(5) If the dosing device is a pump, it shall be cast iron or bronze fitted and with stainless steel screws or constructed of other sound, durable, and corrosion-resistant materials.

(6) Where the soil treatment area is at a higher elevation than the pump, sufficient dynamic head shall be provided for both the elevation difference and friction loss.

(7) Where the dosing device is a pump, an alarm device shall be installed to warn of pump failure.

13.3
Dosing devices for pressure distribution.

(1) The dosing device shall be a pump which is cast iron or bronze fitted and with stainless steel screws or constructed of sound, durable and corrosion-resistant materials.

(2) The pump discharge capacity shall be based upon the perforation discharges for an average head of 1.0 foot for dwellings and 2.0 feet for other establishments. Perforation discharge will be determined by the following formula:

	q = 19.65 cd2 h
where:	q = discharge in gallons per minute;
	c = 0.60 = co-efficient of discharge;
	d = perforation diameter in inches; and
	h = head in feet.

(3) The pump discharge head shall be at least five feet greater than the head required to overcome pipe friction losses and the elevation difference between the pump and the distribution device.

(4) The quantity of effluent delivered for each pump cycle shall be no greater than 25 percent of the average design flow.

(5) A siphon will not be allowed as a dosing device to deliver effluent to a pressure distribution system.

(6) An alarm device shall be installed to warn of pump failure.

SECTION 14. Final Treatment and Disposal

14.1
Final treatment and disposal of all sewage tank effluent shall be by discharge into the soil treatment system. The required soil treatment area shall be determined by the daily sewage flow and the measured percolation rate of the soil.

14.2
Acceptable methods for estimating sewage flow for dwellings are given in Section 10.2, Table I. Methods for measuring percolation rate of the soil are given in Section 9.9. The required soil treatment area size is determined in accordance with Section 14.6, Table V.

14.3
Distribution shall be made in accordance with Section 12.

14.4
Location of trenches and seepage beds:

(1) On slopes greater than 12 percent, the soil profile shall be carefully evaluated in the location of the proposed soil treatment system and downslope to identify the presence of layers with different permeabilities that may cause sidehill seepage. In no case shall a trench be located within 15 feet of where such a layer surfaces on the downslope.

(2) Seepage bed construction shall be limited to areas having natural slopes of less than 6 percent. Beds shall

not be placed in soils with percolation rates slower than 60 minutes per inch or in floodplain areas.

(3) Soil treatment systems shall be located in accordance with setbacks established in Section 11.9, Table III.

(4) Soil treatment areas shall not be placed in areas subject to flooding or in floodplains delineated by local ordinances adopted in compliance with the "Statewide Standards and Criteria for Management of Floodplain Areas of Minnesota", Chapter 6120, or in areas for which regional flood information is available from the DNR, except that in areas where ten year flood information is available from and/or approved by the DNR, soil treatment systems may be installed in accordance with the provisions of Section 15.3.

14.5
Distribution Medium for Trenches and Seepage Beds

(1) Distribution medium shall consist of drainfield rock, gravel-less drainfield pipe or a chambered system.

(A) Drainfield rock shall meet the requirements of Section 2.1(28). There shall be a layer of at least twelve (12) but no more than twenty-four (24) inches of drainfield rock below the distribution pipe. The drainfield rock shall completely encase the top and sides of the distribution pipes to a depth of at least two inches. The total thickness of rock-filled trenches shall not exceed 30 inches.

(B) Gravel-less drainfield pipe including appurtenances shall be:

1. Of commercially fabricated corrugated pipe completely encased by the manufacturer in a geotextile wrap specific to this purpose;

2. An eight-inch or ten-inch nominal ID pipe that conforms to the requirements of this section and meets the requirements of American Society of Testing Materials (ASTM) F667, which is incorporated by reference. Requirements under this section also include the following:

(a) The pipes must be marked with an alignment stripe visible through the geotextile wrap and installed with this stripe at top center, and

(b) The pipes shall contain a row or rows of cleanly cut three-eighths inch to one-half inch diameter holes located in such a manner to provide storage of solids. Each row shall contain a hole in every other corrugation valley, staggered such that every corrugation valley contain one hole.

3. Geotextile wraps specifically designed and tested for use with gravel-less pipe and for installation and use in individual sewage treatment systems and designed to transmit sewage at a long-term acceptance rate which corresponds to the sizing factor as prescribed in Section 14.6 (2);

4. Protected from heat and ultraviolet rays prior to installation.

(C) Chamber media including all piping and appurtenances shall be constructed:

1. Of commercially fabricated materials specific to this purpose;

2. Of materials resistant to sewage tank effluent;

3. With an open bottom;

4. To support the load of overburden and sidewall soil;

5. With slotted or perforated sides to allow sewage to move laterally into the soil and prevent soil penetration into the chamber;

6. No greater than three feet in width; and

7. With vertical outside dimensions less than 30 inches.

14.6
Sizing of Trenches and Seepage Beds

(1) **Drainfield Rock Media.**
Table V gives the required trench bottom assuming 12 inches below the distribution pipe. The required bottom area may be reduced, for trenches only, by the following percentages: 20 percent for 18 inches of drainfield rock below the distribution pipe; 34 percent for 24 inches. Unless pressure distribution is used, all seepage bed bottom areas must be 1.7 times the soil treatment areas required in Table V. With pressure distribution, the bottom area must be 1.2 times the soil treatment area required in Table V.

(2) **Gravel-less drainfield pipe media.**
Sizing shall be based on a factor of 1.2 times the soil treatment area required in Table V, except that no reduction shall be given as specified in 14.5 (A). An eight-inch ID pipe shall be equivalent to a two foot wide rock filled trench with six inches of drainfield rock below the distribution pipe and a ten-inch ID pipe shall be equivalent to a three foot wide rock filled trench with six inches of drainfield rock below the distribution pipe.

(3) **Chambered Media.**
Sizing shall be based on Table V, with the depth of slatted sidewalls being equivalent to the corresponding depth of rock below the distribution pipe.

TABLE V

Percolation Rate *(minutes per inch)*			0.1-5	6-15	16-30	31-45	46-60
Number of Bedrooms	**Tank Size**	**Gallons Per Day**	**Square Feet**				
2	1000 + 500	300	250	380	500	600	660
3	1000 + 1000	450	380	570	750	900	990
4	1000 + 1000	600	500	760	1000	1200	1320
5	1500 + 1000	750	630	950	1250	1500	1650
6	1500 + 1000	900	750	1140	1500	1800	1980
7	2000 + 1000	1050	870	1330	1750	2100	2310
8	2000 + 1000	1200	990	1520	2000	2400	2640
Square Feet Per Gallon			.83	1.27	1.67	2	2.20

Percolation Rate in Minutes Per Inch (MPI)	Soil Texture	Square Feet Per Gallon Per Day	Gallons Per Day Per Square Foot
Faster than 0.1*	Coarse Sand	--	--
0.1 to 5**	Sand	0.83	1.20
0.1 to 5	Fine Sand***	1.67	0.60
6 to 15	Sandy Loam	1.27	0.79
16 to 30	Loam	1.67	0.60
31 to 45	Silt Loam	2.00	0.50
46 to 60	Clay Loam	2.20	0.45
Slower than 60****	Clay	--	--

** Soil too coarse for sewage treatment*

*** Distribution of sewage effluent shall be by pressure flow over the treatment area or by dividing treatment area into a minimum of four (4) equal parts connected serially, by means of drop boxes.*

**** For soils having more than 50 percent of very fine sand by weight, plus fine sand having a particle size range of 0.05 millimeters (sieve size 270) to 0.25 millimeters (sieve size 60), the required soil treatment area is 1.67 square feet per gallon of sewage flow per day.*

***** Soil with too high a percentage of clay for installation of an in ground standard system.*

14.7
Design and Construction of trenches and seepage beds.

(1) The bottom and sides of trenches and beds shall be in original soils at least three (3) feet above the saturated soil or bedrock. In no case shall the bottom of the distribution medium be deeper than 42 inches from the final grade.

(2) The trenches shall not be less than 18 inches nor more than 36 inches wide. Any excavation wider than 36 inches shall be considered a bed. No bed may be wider than 25 feet and parallel beds must be at least 10 feet apart. The width of the excavation for gravel-less drainfield pipe and chambered systems shall be installed per manufacturer's recommendation.

(3) Drainfield rock must be used as the distribution medium in seepage beds.

(4) There shall be a layer of at least 12 but no more than 24 inches of drainfield rock in the bottom of trenches. The drainfield rock shall completely encase the top and sides of the distribution pipes to a depth of at least two inches. The top of the drainfield rock in trenches, beds and mounds must be level in all directions.

(5) The bottom and side of the soil treatment system to the top of the distribution medium shall be excavated in such a manner as to expose the original soil structure in an unsmeared and uncompacted condition. Excavation into the soil treatment area shall be made only when the soil moisture content is at or less than the plastic limit.

(6) Excavation equipment or other vehicles shall not be driven on the soil treatment area. Once the trench or seepage bed is excavated, it shall not be exposed to rainfall prior to placement of the final backfill.

(7) A vertical inspection pipe at least 1-1/2 inches in diameter shall be installed and secured in the distribution medium of every trench or seepage bed. The inspection pipe must be located at an end opposite from where the sewage tank effluent enters the medium. The inspection pipe must have three-eighths inch or larger

perforations spaced vertically no more than six inches apart. At least two perforations must be located in the distribution medium. No perforations shall be located above the geotextile cover or wrap. The inspection pipe must extend to the bottom of the distribution medium and must be capped flush with or above finished grade.

(8) The top and bottom of the distribution medium shall be level in all directions.

(9) Drainfield rock must be covered by a durable non-woven geotextile cover specific to this purpose. The cover must be of sufficient strength to undergo installation without rupture. In addition, the cover must permit passage of water without allowing the passage of overlying soil material into drainfield rock.

(10) The minimum depth of cover over the distribution medium shall be at least six inches. The maximum depth of cover over the distribution pipes shall be no more than 24 inches.

(11) The trenches or beds shall be backfilled and crowned above finished grade to allow for settling. The top six inches of soil shall have the same texture as the adjacent soil.

(12) A vegetative cover shall be established over the soil treatment system. The soil treatment system shall be protected until a vegetative cover is established. The vegetative cover shall not interfere with the hydraulic performance of the system and shall provide adequate frost and erosion protection.

(13) All joints for gravel-less drainfield pipes or chambered systems must be secured as recommended by the manufacturer.

(14) Backfilling for gravel-less drainfield pipe and chambered systems shall not crush or damage the medium.

14.8
Dual Field Systems.

(1) Dual field system shall be used only where the percolation rate is slower than five minutes per inch unless a liner or pressure distribution system is employed as specified in Section 13.3.

(2) Dual field systems shall be sized, designed and constructed as set forth above for standard systems except as follows:

(A) The soil treatment area shall be divided into two or more parts.

(B) Alternating soil treatment areas shall each be connected to a valve box outlet.

(3) A part of the soil treatment area shall be used no more than one year unless the effluent level indicates that a longer duration can be used.

14.9
Rapidly permeable Soils.

(1) Soil treatment systems placed in soils with a soil sizing factor of 0.83 gallons per day per square foot must provide at least one of the following treatment techniques.

(A) Distribute the sewage tank effluent by pressure flow over the treatment area as specified in

Section 13.3.

(B) Divide the total soil treatment area into at least four parts with no part larger than 25 percent of the area required by Section 14.6. and the parts constructed for serial application.

14.10
Mounds.

(1) Location of Mounds

(A) Mounds must be constructed on original soils so that there is at least 36 inches of separation between the drainfield rock layer and limiting soil characteristics as defined in Section 2.1 (76).

(B) There must be at least 18 inches of original soil with a percolation rate faster than 60 minutes per inch above the limiting soil characteristics as defined in Section 2.1 (76).

(C) Exceptions are provided to Section 14.10, (A) and (B) for previously developed sites: a depth of 12 inches of original soil may be used and a 61 to 120 minutes per inch percolation rate may be used.

(D) If original soil conditions do not exist on a site proposed for a mound, as defined in Section 2.1 (47), the site is deemed unsuitable for a mound.

(E) Setbacks for mounds shall be as established in Table III and shall be measured from the absorption area.

(F) Absorption areas shall not be placed in areas subject to flooding as described in Section 15.3 (4).

(G) On slopes of one percent or greater, and where the percolation rate in the top foot of original soil is in the 61 to 120 minutes per inch range, mounds shall not be located where the ground surface contour lines directly below the long axis of the rock bed represent a swale or draw, unless the contour lines have a radius of curvature greater than 100 feet. Mounds must never be located in swales or draws where the radius of curvature of the contour lines is less than 50 feet. In no case shall mounds be placed on slopes greater than 12 percent.

(2) Design of Mounds. Drainfield rock must be used as the distribution medium in mounds.

(A) The bottom area of the rock bed shall be calculated by multiplying the average design flow by 1.0 square feet per gallon per day.

(B) The width of a single rock bed must not exceed ten feet.

(C) A minimum of 12 inches of clean sand must be placed where the rock bed is located.

(D) The required absorption width is calculated by multiplying the rock bed width by the absorption ratio. The absorption ratio shall be determined according to Table VI, using percolation rate of the upper 12 inches of soil in the proposed absorption area.

Table VI

Percolation Rate of Original Soil Under Sand Layer, Minutes per Inch	Absorption Ratio
Faster than 5	1.00
6 to 15	1.50
16 to 30	2.00
31 to 45	2.40
46 to 60	2.67
61 to 120	5.00

(E) The required absorption width for mounds constructed on slopes from zero to one percent shall be centered under the rock bed width. The required absorption width for mounds constructed on slopes greater than one percent shall be measured downslope from the downslope edge of the rock bed width and measured in the direction of the original land slope and perpendicular to the original contours.

(F) The side slopes on the mound must not be steeper than three horizontal units to one vertical unit and shall extend beyond the required absorption area, if necessary.

(G) On slopes of one percent or greater, the upslope edge of the level drainfield rock must be placed on the contour.

(H) Whenever mounds are located on slopes greater than one percent, a diversion must be constructed immediately upslope from the mound to intercept and direct runoff.

(I) A maximum of two ten foot wide beds may be installed side by side in a single mound if the original soil percolation rate is between five and 60 minutes per inch to a depth of at least 24 inches below the sand layer. The beds must be separated by at least four feet of clean sand.

(J) Distribution of effluent over the rock bed must be by level perforated pipe under pressure. A pump must be used as specified in Section 13.3.

(K) The rock bed shall completely encase the top and sides of the distribution pipes to a depth of at least two inches above the pipe. The rock shall extend nine inches below the pipe.

(L) A vertical inspection pipe at least 1-1/2 inches in diameter shall be installed and secured at each rock bed/sand interface of every mound. The inspection pipe must have 3/8 inch or larger perforations spaced vertically no more than six inches apart. At least two perforations must be located in the rock bed. No perforations shall be located above the permeable synthetic fabric. The inspection pipe must extend to the bottom of the rock bed and must be capped flush with or above finished grade.

(M) The rock bed must be covered with a durable non-woven geotextile cover specific to this purpose. The cover must be of sufficient strength to undergo installation without rupture. In addition, the cover must permit passage of water without passage of overlying soil material into the drainfield rock.

(N) Sandy to loamy soil material must be placed on the rock bed to a depth of one foot in the center of the mound and to a depth of six inches at the sides. When two rock beds are installed side by side, the soil material must be 18 inches deep at the center of the mound and six inches deep at the sides.

(O) Six inches of top soil must be placed over the entire mound. Topsoil does not include peat soil textures.

(3) Surface preparation for Mounds.

(A) The supply pipe from the pump to the mound area must be installed before mound soil surface preparation. The trench excavated for the supply pipe must be carefully backfilled and compacted to prevent seepage of effluent.

(B) All vegetation in excess of two inches in length and dead organic debris must be removed from the absorption area. Trees must be cut nearly flush with the ground and stumps should not be removed.

(C) All surface preparation must take place when the upper 12 inches of soil has a moisture content of less than plastic limit and soil conditions allow field testing of soil properties and these properties are maintained throughout installation.

(D) The absorption area must be roughened by backhoe teeth or moldboard, or chisel plowed to a depth of eight inches. Discing is allowed if the upper eight inches of soil has a texture of sandy loam or courser. If plowed, furrows must be thrown uphill and there must not be a dead furrow in the absorption area. A rubber tired tractor may be used for plowing or discing. Rototilling or pulverizing the soil is not allowed. The original soil must not be excavated or moved more than one foot from its original location during soil surface preparation.

(E) Prior to placement of six inches of clean sand, no vehicle shall be driven on the absorption area after the surface preparation is completed. If rainfall occurs on the prepared surface, the site must be allowed to dry below the plastic limit and roughened as specified in 14.9(C)4).

(4) Mound Construction.

(A) The clean sand must be placed by using a construction technique that minimizes compaction. If the clean sand is driven on for construction, a crawler or track-type tractor must be used for mound construction. At least six inches of sand must be kept beneath equipment to minimize compaction of the prepared surface.

(B) The sand layer upon which the rock bed is placed must be level in all directions.

(C) The top of the rock bed must be level in all directions.

(D) Construction vehicles must not be allowed on the rock bed until backfill is placed.

(E) A vegetative cover must be established over the entire area of the mound. The soil treatment system mound shall be protected until a vegetative cover is established. The established vegetative

cover shall not interfere with the hydraulic performance of the system and shall provide adequate frost and erosion protection.

(F) Shrubs must not be planted on the top of the mound. Shrubs may be placed at the foot and side slopes of the mound.

14.11
At-grade systems.

(1) Location of at-grade systems

(A) At-grade systems must be constructed on original soils so that there is at least 36 inches of separation between the bottom of the rock bed and saturated soil or bedrock.

(B) Percolation tests shall be conducted in the upper 12 inches of original soil. At-grade systems are only allowed if constructed on soils with percolation rates faster than 61 minutes per inch.

(C) At-grade systems shall not be installed in areas with slopes greater than 12 percent.

(D) Setbacks must be in accordance with Table III. Setbacks shall be measured from the edge of the rock bed.

(2) Design of at-grade system.

(A) Rock bed absorption width shall be calculated by multiplying the linear loading rate by the soil sizing factor as identified in Section 14.6, Table V, using the percolation rate of the upper 12 inches of soil in the proposed absorption area. The linear loading rate shall be between two and eight gpd/ft as determined by the relationship between vertical and horizontal water movement in the soil. Total rock bed width for sloping ground shall consist of the rock bed absorption width plus enough rock on the upslope side to provide stability.

(B) Rock bed length shall be calculated by multiplying the soil sizing factor by the average design flow and dividing by the rock bed width.

(C) At-grade systems shall be pressurized in accordance with Section 12.3 and Section 13.3. Distribution pipe shall be installed in the center of the rock bed on slopes less than one percent and on the upslope edge of the rock bed absorption width on slopes one percent or greater.

(3) Construction of At-Grade systems.

(A) Surface preparation for at-grade systems shall be the same as for mound construction, Section 14.10 (C), (D) and (E).

(B) Drainfield rock must be used as the distribution medium in at-grade systems.

(C) The upslope edge of an at-grade system shall be installed along the natural contour.

(D) The rock bed shall completely encase the top and sides of the distribution pipe to a depth of at

least two inches above the pipe. There shall be at least nine inches of rock below the distribution pipe.

(E) The entire rock bed shall be covered with a durable non-woven geotextile cover specific to this purpose. The cover must be of sufficient strength to undergo installation without rupture. In addition, the cover must permit passage of water without allowing the passage of overlying soil material into the drainfield rock.

(F) One foot of loamy or sandy cover material shall be installed over the rock bed. Cover shall extend at least five feet from the ends of the rock bed and be sloped to divert surface water. Side slopes shall not be steeper than four horizontal units to one vertical unit. The upper six inches of the loamy soil cover must be topsoil. Topsoil must be of a quality that provides a good vegetative cover on the at-grade system and must exclude peaty material.

(G) Three vertical inspection pipes of at least 1.5 inches in diameter shall be installed and secured along the downslope portion of the rock bed. These pipes shall be located within three feet of the downslope edge of the rock bed at the middle and one-sixth of the total rock bed length and placed as measured from the ends of the rock bed. The inspection pipes shall have three-eights inch or larger perforations spaced vertically no more than six inches apart. No perforations shall exist above the permeable synthetic fabric. The inspection pipes must extend to the rock bed/soil interface and must be stabilized and capped flush with or above finish grade.

(H) A vegetative cover must be established over the entire area of the at-grade system. The soil treatment at-grade system shall be protected until a vegetative cover is established. The established vegetative cover shall not interfere with the hydraulic performance of the system and shall provide adequate frost and erosion protection.

SECTION 15. Alternative Systems

15.1

The intent of this part is to provide standards for the location, design, installation, use and maintenance of alternative sewage treatment systems. Alternative systems must meet the requirements below and can only be used when a standard system cannot be installed or is not the most suitable treatment. They may be employed provided:

(1) Reasonable assurance of performance of the system is presented to the permitting authority;

(2) The engineering design of the system is first approved by the permitting authority;

(3) There is no discharge to the ground surface or to surface waters; systems designed with a ground surface or surface water discharge are not covered under this Chapter and must obtain a National Pollutant Discharge Elimination Permit (NPDES) or state disposal system (SDS) permit from the Minnesota Pollution Control Agency;

(4) A three-foot minimum separation is provided between the bottom of the distribution medium and the saturated soil or bedrock;

(5) Treatment and disposal of wastes is completed in a manner that protects the public health and general welfare;

(6) The system complies with all local codes and ordinances and is subject to periodic inspections by the permitting authority to assure adherence to specifications;

(7) A mitigative plan is provided to the permitting authority indicating what will be done if the system fails to provide treatment and disposal; and

(8) A water meter is provided (located downflow of any outside sillcocks) to verify water use.

15.2
Artificial Drainage.

(1) Where natural drainage does not provide three feet of separation, artificial drainage may be used to intercept the high water table provided the water table has a slope of at least two feet per hundred feet and that drainage exists upslope of the soil treatment system. There shall be at least 10 feet of undisturbed soil between the sidewall of the soil treatment unit and the artificial drainage. Monitoring may be required.

(2) Where required, water table measuring piezometers shall be strategically placed, capped and extend at least three feet lower than the bottom of the soil distribution medium. Monitoring shall occur by measuring water table depths prior to installation and over time, including during wet periods. Monitoring records must be maintained. If the artificial drain includes a dedicated surface discharge, periodic sampling as approved by the permitting authority must occur.

(3) In all cases, the greatest practicable vertical separation distance from the system bottom to saturated soil shall be provided (with a minimum of three feet).

15.3
Floodplain Areas.

(1) There shall be no pipe or other installed opening between the distribution medium and the soil surface.

(2) Trench systems shall be located on the highest feasible area of the lot and shall have location preference over all other improvements except the water supply well. The bottom of the distribution medium shall be at least as high as the elevation of the ten-year flood. The sewage tank may be located so as to provide gravity flow to the trenches.

(3) If a dosing chamber is used to move effluent from the sewage tank to the trenches, provisions shall be made to prevent the pump from operating when inundated with flood waters.

(4) When it is necessary to raise the elevation of the soil treatment area, a mound system as specified in Section 14.10 may be used with the following additional requirement: In no case shall the sand fill for the mound exceed 48 inches below the rock bed. The elevation of the mound shall be such that the elevation of the bottom of the rock bed shall be at least one-half foot above the ten-year flood elevation. Inspection pipes shall not be installed unless the top of the mound is above the elevation of the regional flood.

(5) When the top of a sewage tank is inundated, the dwelling must cease discharging sewage into it. This may

be accomplished by either temporarily evacuating the structure until the system again becomes functional, or by diverting the sewage into a holding tank sized and installed according to Section 15.8.

(6) The building sewer shall be designed to prevent backflow of liquid into the building when the system is inundated. If a holding tank is used, the building sewer shall be designed to permit rapid diversion of sewage into the holding tank when the system is inundated.

(7) Whenever the water level has reached a stage above the top of a sewage tank, the tank shall be pumped to remove all solids and liquids after the flood has receded before use of the system is resumed.

15.4 Greywater Systems.
A toilet waste treatment device shall be used in conjunction with a greywater system. In all cases, only toilet wastes shall be discharged to toilet waste treatment devices. Greywater or garbage shall not be discharged to the device except as specifically recommended by a manufacturer.

(1) **Plumbing.**
The drainage system in new dwellings or other establishments shall be based on a pipe diameter of two inches to prevent installation of a water flush toilet. There shall be no openings or connections to the drainage system, including floor drains, larger than two inches in diameter. For repair or replacement of an existing system, the existing drainage system may be used. Toilets or urinals of any kind shall not be connected to the drainage system. Toilet waste or garbage shall not be discharged to the drainage system. Garbage grinders shall not be connected to the drainage system.

(2) **Building Sewer.**
The building sewer shall meet all requirements of Section 7.3 except that the building sewer for a greywater system shall be no greater than two inches in diameter.

(3) **Sewage Tank.**
Greywater septic tanks shall meet all requirements of Section 11.1. The sewage tank for a greywater system shall be a single tank in accordance with the first tank shown in Section 11.7, Table II.

(4) The soil treatment area shall be 60 percent of the amount calculated in Section 14.6, Table V.

(5) Distribution and Dosing. Distribution and dosing of greywater shall meet all requirements of Sections 12 and 13.

(6) Final Treatment and Disposal. A standard greywater system shall meet all requirements of Section 14.

15.5 Privies.

(1) Privies shall only be considered when there is no water supplied to the dwelling.

(2) Pit privies shall not be installed where the bottom of the pit is less than three feet above the saturated soil or bedrock. A vault privy shall be used in areas not meeting the three foot separation. The vault of a vault privy shall be constructed in the same manner as a sewage tank.

(3) Privies shall be set back from surface waters, buildings, property lines, and water supply wells as prescribed in Table III.

(4) Pits or vaults shall be of sufficient capacity for the dwelling they serve, but shall have at least 50 cubic feet of capacity. The sides of the pit shall be curbed to prevent cave-in. The privy shall be constructed so as to be easily maintained and it shall be insect proof. The door and seat shall be self-closing. All exterior openings, including vent openings, shall be screened.

(5) Privies shall be adequately vented.

(6) When the privy is filled to within one foot of the top of the pit, the solids shall be removed.

(7) Abandoned pits shall have the solids removed and be filled with clean earth and slightly mounded to allow for settling. Removed solids shall be disposed of in accordance with Section 17.8.

15.6 Other Toilet Waste Treatment Devices.

(1) Other waste toilet treatment devices may be used where reasonable assurance of performance is provided.

(2) All devices shall be vented.

(3) All electrical, gas, and water connections shall conform to all local ordinances and codes.

(4) Operation and maintenance shall follow the manufacturer's recommendations.

15.7 Collector Systems.

(1) Where site and soil conditions do not allow for final treatment and disposal on an individual lot, a soil treatment system located on another lot or lots may be employed.

(2) Except for systems designed for 1,200 gallons per day or less, Collector systems shall be designed by a registered professional engineer, licensed in the State of Minnesota, and certified by the MPCA as competent in the field of on-site system design.

(3) **Hydrogeologic Study:**
due to the effect large flows have on groundwater quality and groundwater mounding, a hydrologist shall determine site suitability based on the following. A hydrogeologic study may not be required for a collector system designed for 1,200 gallons per day or less.

(A) Identification of the depth to the static groundwater level and any perched water or areas likely to be seasonally saturated;

(B) Identification of the depth to bedrock;

(C) Identification of the proposed depth of the distribution medium;

(D) Determination of the direction of groundwater flow, both horizontally and vertically;

(E) Determination of the background water quality at the location;

(F) Estimation of the height of groundwater mounding from the proposed system to confirm

adequate vertical separation;

(G) Determination whether drinking water standards can be met at the property boundary;

(H) Estimation of the impact of water quality on existing or future downstream wells. Depending on this estimate, piezometer and/or monitoring wells may be required.

(4) Application to the department shall be accompanied by the hydrogeologic study and engineering drawings and specifications and shall demonstrate compliance with all applicable local ordinances, the plumbing code and issues related to joint ownership of land, joint system maintenance responsibilities, homeowners associations, easements, covenants, and such other items as may apply to the specific proposal.

(5) **Design.**

(A) Sewer systems shall be designed based on the sum of the areas required for each dwelling or other establishment being served. Flows shall be increased to allow for 200 gallons of infiltration per inch of pipe diameter per mile per day.

(B) The system shall be designed with each dwelling or other establishment having a sewage tank or with a common sewage tank. In the case of a common tank, the capacity of the tank shall be the sum of the tanks sized according to Section 11.7.

(C) The sum of a common soil treatment system shall be based on the sum of the areas required for each dwelling unit or establishment being served.

(D) The sewer for systems with common sewage tanks shall be constructed to give mean velocities, when flowing full, or not less than two feet per second. The sewer for systems with individual sewage tanks shall be so constructed and designed to hydraulically conduct the flow for which they were designed. In no case shall a gravity sewer be less than four inches in diameter. The diameter and grade line should be based on a flow equal to 50 percent of the average design flow occurring in a one-hour period.

(E) Infiltration or exfiltration shall not exceed 200 gallons per inch of pipe diameter per mile per day.

(F) Cleanouts, brought flush with or above finished grade, shall be provided wherever a common sewer joins an individual building sewer or piping from an individual sewer tank, or every 100 feet, whichever is less, unless maintenance hole access if provided.

(G) There shall be no physical connection between sewers and water supply systems. Sewers shall be set back from water supply systems and piping as required for building sewers. Where it is not possible to obtain proper separation distances, the sewer connections shall be watertight and pressure tested.

(H) Pipes and pipe joints shall be watertight.

(I) Dosing chambers shall meet all requirements in Section 13.1.

(J) Pumps and dosing chambers shall be sized to handle 50 percent of the average design flow in a one-hour period. Common pump tanks shall have apumpout capacity of ten percent of average design flow and two alternating pumps.

(K) A separate alarm system for each pump shall be provided for all pumping stations to warn of pump failure, overflow, or other malfunction.

(L) For systems with individual septic tanks, a stilling tank of at least 1,500 gallons liquid capacity or ten percent of the average design flow, whichever is greater, should be provided before the soil treatment system.

(M) Pump stations shall have maintenance holes flush with or above finished grade for cleaning and maintenance. Maintenance covers shall be secured so as to prevent unauthorized entry.

(N) All persons using a common individual sewage system shall assure, by contract with maintenance personnel or other equivalent means, that the system will be maintained throughout its useful life. The system so maintained includes common soil treatment systems, common sewage tanks, common pumps, common pump stations, common sewers, and all individual tanks connected to the common system.

15.8 Holding Tanks.

(1) Sewage holding tanks may be considered for installation on previously developed sites, as a temporary method for periods of up to one (1) year, during which time measures are taken to provide municipal sewer service or the installation of an approved system as provided in this Chapter. Holding tanks may be considered on a permanent basis for nonresidential, low water use establishments generating less than 150 gallons per day of waste, subject to the approval of the department. Holding tanks may also be considered for floor drains for vehicle parking areas and existing facilities potentially generating a hazardous waste.

(2) A holding tank shall be constructed of the same materials and by the same procedures as specified in this Chapter for sewage tanks, Section 11.

(3) A cleanout pipe of at least six inches diameter shall extend to the ground surface and be provided with seals to prevent odor and to exclude insects and vermin. A maintenance hole of at least 20 inches least dimension shall extend through the cover to a point no less than six inches below the finished grade. If the maintenance hole is covered with less than 6 inches of soil, the cover must be secured to prevent unauthorized access.

(4) When installed in areas of high ground water within six feet of the ground surface, holding tanks shall be installed entirely above the groundwater level or shall be installed according to an engineer's design to prevent flotation.

(5) For a dwelling, the minimum size shall be 1,200 gallons or four hundred times the number of bedrooms, whichever is greater. For other establishments, the minimum capacity shall be based on measured or estimated flow rates. Minimum capacity shall be equal to at least eight (8) times the average design flow.

(6) Holding tanks shall be located as specified for sewage tanks in Table III; in an area readily

accessible to the pump truck under all weather conditions; and where accidental spillage during pumping will not create a nuisance.

(7) A contract for disposal and treatment of the septage shall be maintained by the owner with a pumper, municipality, or firm established for that purpose.

(8) Holding tanks shall be monitored to minimize the chance of accidental sewage overflows by installation of an alarm or warning device which will activate a signal when the tank reaches seventy-five (75) percent of its capacity.

(9) The permitting authority shall be provided right of access to perform periodic maintenance and operational inspections of the system.

SECTION 16. Experimental Systems

16.1
Systems utilizing innovative techniques or methods may be considered for new or existing development under the following conditions:

(1) The permit for experimental systems shall be recorded in the Washington County Recorder/Registrar of Titles Office setting forth the fact that this is an experimental system, including the details of the performance monitoring, mitigation plan, and mitigation cost agreement.

(2) Reasonable assurance of performance of the system is presented to the permitting authority.

(3) The system being proposed is supported by engineering data and approved by the permitting authority.

(4) The system is in compliance with Minnesota Pollution Control Agency Rules.

(5) Experimental systems will not be allowed in areas where a new system or modifications to a new system are not feasible if failure occurs; adequate area for long-term sewage treatment by suitable soils, as required for standard systems, is defined and reserved on the site. For the purposes of this section, long-term sewage treatment is considered space for two standard on-site soil treatment systems.

(6) Performance monitoring of the system, including but not limited to, water use metering, effluent quality and system inspection and maintenance as defined by the permitting authority are provided.

(7) A mitigative plan must be provided to deal with possible system failure. Such plan must include the planned corrections and/or replacement, an agreement among the parties clarifying who will pay the cost of mitigation, and a statement of indemnification holding the County harmless from any damages arising out of a system failure.

16.2
Failure of an experimental system to function or to properly treat waste to a standard equivalent to a standard drainfield system will require discontinuation of use of the experimental system until modifications can be made or the system replaced with a standard system.

16.3
Proposed experimental systems which do not provide the three (3) feet minimum separation must obtain a variance from the Minnesota Pollution Control Agency as specified in 7080.0305, subp. 3.

SECTION 17. Maintenance

17.1
All individual sewage treatment systems, both currently existing as well as those installed under this Chapter, and all components must be maintained in compliance with this section and other manufacturer requirements.

17.2
The owner of an individual sewage treatment system or the owner's agent shall regularly, but in no case less frequently than every three years, have the tank or tanks pumped. As an alternative, the owner may inspect and measure the accumulations of scum, which includes grease and other floating materials at the top of each septic tank and compartment along with the sludge, which includes the solids denser than water.

17.3
The owner of a septic tank or the owner's agent must arrange for the removal and proper disposal of septage from all tanks or compartments in which the top of the sludge layer is less than 12 inches below the bottom of the outlet baffle or whenever the bottom of the scum layer is less than three inches above the bottom of the outlet baffle.

17.4
All accumulations of sludge, scum and liquids must be removed through the maintenance hole. The owner or the owner's agent shall install maintenance holes in sewage tanks in accordance with Section 11.3 (1) to allow for maintenance to take place through the maintenance hole.

17.5
Individual sewage additives must not be used as a means to reduce the frequency of proper maintenance and removal of septage from the septic tank.

17.6
Individual sewage treatment system additives which contain hazardous substances must not be used in individual sewage treatment systems.

17.7
Any accumulation of solids in pump stations, distribution devices, valve boxes, or drop boxes shall be considered septage. Whenever inspection of pump stations, distribution devices, valve or drop boxes indicates accumulation of solids, such device shall be promptly cleaned.

17.8
Septage shall be disposed of in accordance with state, federal or local requirements. If septage is disposed into a municipal sewage treatment facility, a written agreement must be provided between the accepting facility and the septage disposal firm.

17.9

Any maintenance activity used to increase the acceptance of effluent to a soil treatment system must:

(1) Not be used on failing systems;

(2) Not decrease the separation to the saturated soil or bedrock;

(3) Not cause preferential flow from the system bottom to the saturated soil or bedrock; and

(4) Be conducted by a qualified employee or under an installer license.

17.10
Licensed pumping contractors shall maintain accurate records of pumping activity in Washington County and shall report such data annually to the department on forms provided.

SECTION 18. System Abandonment

18.1
Tank abandonment procedures for sewage tanks, cesspools, leaching pits, dry wells, seepage pits, privies, and distribution devices are as follows: all solids and liquids shall be removed and disposed of in accordance with 17.8, and abandoned chambers shall be removed or filled with soil material.

18.2
Access for future discharge to the system shall be permanently denied.

18.3
If soil treatment systems are removed, contaminated materials shall be properly handled to prevent human contact and shall be disposed of in a manner assuring that public health and the environment are protected.

SECTION 19. Enforcement

19.1
It is hereby declared unlawful for any person, firm or corporation to violate any term or provision of this Chapter. Violation thereof shall be a misdemeanor. Each day that a violation is allowed to continue shall constitute a separate offense.

19.2
In the event of a violation or threatened violation of this Chapter, the department, in addition to other remedies may request appropriate actions or proceedings to prevent, restrain, correct or abate such violations or threatened violations. In addition, written notice in the form of a license complaint may be made to the Commissioner of the Minnesota Pollution Control Agency.

19.3
In cases where a public health nuisance has been determined to exist, the Department may institute enforcement action under the Local Public Health Act, Minnesota Statutes Chapter 145A.

SECTION 20. Separability

20.1
It is hereby declared to be the intent that the several provisions of this regulation are separable in accordance with the following:

(1) If any court of competent jurisdiction shall adjudge any provision of this regulation to be invalid, such judgement shall not affect any other provisions of this regulation not specifically included in said judgement.

(2) If any court of competent jurisdiction shall adjudge invalid the application of any provision of this regulation to a particular property, building or structure, such judgement shall not affect the application of said provision to any other property, building or structure not specifically included in said judgement.

SECTION 21. Effective Date

21.1
The regulations contained in this chapter shall become effective from and after October 20, 1997, after their publication according to law.