SEWAGE CODE REGULATION 529

HAMILTON COUNTY GENERAL HEALTH DISTRICT
250 William Howard Taft Road, 2nd Floor
Cincinnati, Ohio 45219

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TABLE OF CONTENTS

REGULATION 529

SECTION 529.01: DEFINITIONS

The following definitions are used in Regulation 529 of the Sewage Code of the Hamilton County General Health District:

A) **Accessory Building** - any built or unitized structure detached from the dwelling or structure with a purpose, function, or activity which is clearly subordinate and incidental to the main building.

B) **Adjacent Property** - any parcel which directly borders any part of another parcel.

C) **Alter or Alteration** - to change by making additions or deletions in location, design, or materials of existing STS and of any underground drains within twenty-feet of such systems.

D) **Alteration Permit** - the document used by an applicant to supply sufficient information to the Hamilton County General Health District so that proper alterations to an STS can be made.

E) **ANSI** - the American National Standards Institute.

F) **AOP** - the Association of Ohio Pedologists.

G) **ARCPACS** - the American Registry of Certified Professionals in Agronomy, Crops, and Soils.

H) **ASTM** - the American Society for Testing and Materials.

I) **Application for Approval to Construct/Replace** - the document used by an applicant to supply sufficient information to the Hamilton County General Health District so that an approved STS design can be established.

J) **Available** - of such location and design of a sanitary sewerage system whereby:

1) It is capable of accepting flow as determined by the sanitary sewer authority; and

2) The nearest point of the right-of-way containing the sanitary sewer is less than or equal to 200 feet from the nearest point of the dwelling or structure; and

3) The sanitary sewer is not limited for use because of a legal barrier, physical barrier or other technical feature as determined by the Health District.

K) **Bedrock** - consolidated or layered rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

L) **Bedroom** - any room within a dwelling or structure that might reasonably be used as a sleeping room including, but not limited to, rooms designated as a den, office, or study.

M) **Biochemical Oxygen Demand (BOD)** - is the amount of oxygen, expressed in mg/L, that bacteria take from the water when they oxidize organic matter. The standard test measures the oxygen taken up in five days at 20^{o}C.

N) **Board of Health** - the Board of Health for the Hamilton County General Health District, Ohio, as provided by Section 3709.07 of the Ohio Revised Code.

O) **Building Drain** - that part of the lowest horizontal piping of a building drainage system which receives the discharge from soil, waste and other pipes inside the walls of any building, and conveys such to the building sewer two and a half (2½) feet outside the building wall.

P) **Building Sewer** - that part of the horizontal piping of a drainage system which receives and conveys the discharge from the building drain to the public sanitary sewer, private sanitary sewer, STS, or other points of treatment and dispersal.

Q) **Critical Control Functions** - those components or processes of the STS that, when subject to malfunction due to mechanical or electrical failure, would jeopardize the treatment capacity of the system.

R) **CSA or CAN/CSA** - the Canadian Standards Association or CSA International.

S) **Defined Drainageway** - a natural concavity in the landscape which exhibits an eroded channel with sufficient width and depth so that upon finish grading of the adjacent area the channel cannot be crossed with a hand mower, and which character is continuous to the point of discharge into a larger drainage feature.

T) **District** - the Board of Health of the Hamilton County General Health District or the authorized representative of the Board.

U) **Dwelling** - any building or place used or intended to be used by human occupants as a single family, two family, or three family residence.

V) **Easily Accessible** - of such location and design as to permit exposure with the use of only simple tools, such as screwdriver, pliers, open-end wrench or other simple tools supplied by the manufacturer.

W) **Effluent** - the liquid discharge from any component of an STS.

X) **Equalized Distribution** - pressurized distribution that allows for even dispersal of a portion of the daily design flow over a defined infiltration area at controlled time intervals.

Y) **Fecal Coliform** - a portion of the coliform group of bacteria which is present in the intestinal tract of warm-blooded animals and is evidence of the presence of human or animal wastes.

Z) **Filter -** any device or material which separates matter in suspension from a liquid.

AA) **Free Outfall or Freeboard** - the vertical distance between the invert of a pipe and a drainageway which is to be no less than six (6) inches.

BB) **GPD** – Gallons Per Day.

CC) **GPM** – Gallons Per Minute.

DD) **Gradient Drain** – a subsoil drain that aids internal drainage of the soil around an STS.

EE) **Hamilton County General Health District** - that agency and its employees authorized by Ohio Revised Code Chapters 3707 and 3709.

FF) **Hardscape –** Any landscaping feature including but is not limited to driveways, patios, walls, walkways, rock gardens, retaining walls or similar objects.

GG) **Health Commissioner** - the legally designated Health Commissioner of the Hamilton County General Health District or his authorized representatives.

HH) **Health District** – the Hamilton County General Health District.

II) **Household Sewage Treatment System (HSTS)** – any treatment system or part thereof receiving sewage from a single family, two family, or three family dwelling.

JJ) **IAPMO** - the International Association of Plumbing And Mechanical Officials.

KK) **Infiltrative Surface** - the plane within the soil absorption component at which the effluent is applied to in situ soil or elevated sand fill.

LL) **In Situ Soil** - undisturbed soil naturally deposited or formed in its present location or position.

MM) **Installer** - any person who installs or is in the business of installing a sewage treatment system or part thereof.

NN) **Installer's Manual, Installation Manual, Design or Installation Requirements** – the document or documents which are approved by the Hamilton County General Health District for the use of design, construction, or installation of an STS, these documents contain sighting, installation, and other specifications.

OO) **Instantaneous Loading Rate (IRL)** - the volume of effluent per dose applied to each unit area of the infiltrative surface expressed in gallons per square feet or depth of effluent applied to the absorption area per dose. Combined with defined dosing intervals, an ILR helps quantify equalized distribution.

PP) **Interceptor Drain** – an upslope drain with gravel or other drainage collection systems to the ground surface intended to prevent surface and ground water from moving into the area of a soil absorption component.

QQ) **Isolation Distance** - the horizontal distance between any portion of the STS and a designated boundary.

RR) **Limiting Condition** - bedrock, the normal ground water table, a restrictive soil layer, a rapidly permeable layer, a seasonal or perched water table, or other condition that severely limits the treatment or dispersal of effluent.

SS) **Linear Loading Rate** (LLR) - the volume of effluent applied daily along the landscape contour expressed in gallons per day per linear foot. The LLR is used to determine the required length of the lateral distribution system parallel to surface contours.

TT) **Lot** - a legally recorded parcel of land used or intended to be used for the site of a structure or a single family, two family, or three family dwelling site.

UU) **NEMA** - National Electrical Manufacturers Association.

VV) **Non-Proprietary Unit** - a component that is constructed at the site by the registered installer in accordance with general design standards, and such component is not offered for sale as a proprietary unit.

WW) **Normal Ground Water Table** - the shallowest depth of soil, unconsolidated material, or bedrock which is saturated with water for an extended or permanent time period.

XX) **Operation Permit** - a permit issued to the owner of an STS to operate an STS in Hamilton County.

YY) **Order One Soil Survey** - soil inventories produced for very intensive land uses that require detailed information about soils. Standards are described in Section 655.04 of the National Soil Survey Handbook.

ZZ) **Owner** - any person who, alone or jointly or severally with others:

1) Shall have legal title to any real property, or STS with or without accompanying actual possession thereof; or

2) Shall have charge, care or control of any real property, or STS, as owner or authorized agent or representative of the owner, or as executor, executrix, administrator, administratrix, trustee, or guardian of the estate of the owner.

AAA) **Parcel** - the registered land area used or intended to be used for the site of a structure or a single family, two family, or three family dwelling.

BBB) **Permit to Install OR Installation Permit** - a permit issued by the Hamilton County General Health District to a registered and bonded installer/repairer prior to the construction or alteration of an STS.

CCC) **Person** - any individual, partnership, association, syndicate, company, firm, trust, corporation, government, department, bureau, agency or any other entity recognized by law.

DDD) **Point of Discharge** - the point at which the effluent from an STS or drain enters a public ditch or discharges to the surface of the ground or to a body of water.

EEE) **Pollution** - the placing of any noxious or deleterious substance in any waters of the state or affecting the properties of any waters of the state in a manner which renders such waters harmful or inimical to the public health, or to animal or aquatic life, or to the use of such waters for domestic water supply, or industrial or agricultural purposes or for recreation.

FFF) **POTW** – Publicly Owned Treatment Works.

GGG) **Privy** - any sanitary, waterless device for the collection and storage of human excreta, excluding chemical commodes or other portable receptacles.

HHH) **Pressurized Distribution** - dispersal of effluent in a manner that assures no more than a ten percent difference in flow rate between the proximal and distal orifices on each distribution lateral.

III) **Pretreatment Component** - an STS component producing secondary or higher quality effluent capable of being sampled at a discrete collection point prior to soil absorption or approved discharge point.

JJJ) **Proprietary Unit** - a component that is designed and manufactured as a product having verified performance capabilities related to onsite treatment or dispersal.

KKK) **Public Health Nuisance** - any condition created by sewage or sewage effluent which is injurious or potentially injurious to the health, safety, comfort, or property of a person, or which pollutes waters of the state.

LLL) **Qualified Engineer** - any person who possesses a valid certificate of registration as a professional engineer from the State of Ohio Board of Registration of Professional Engineers and Surveyors and who has experience in STS design.

MMM) **Qualified STS Designer** - any person who possesses a valid certificate of registration from the State of Ohio as a Sanitarian, a qualified engineer, or other qualified individual that has good knowledge and demonstrates understanding of soil properties, which can prepare accurately scaled STS plans, and has knowledge and demonstrates understanding of calculations used for the design of STS which meet the standards and specifications of the Hamilton County Board Of Health, and which, once developed, has successfully passed the STS designer's test. Additionally, this person is a qualified soils evaluator or works closely with a qualified soils evaluator. Any designer of a small flow onsite treatment system shall be a qualified engineer in accordance with the requirements of the Ohio Revised Code.

NNN) **Qualified Individual** - any person who possesses a valid certificate of registration from the State of Ohio as a Sanitarian or other individual capable of accurately submitting information requested by the Hamilton County General Health District.

OOO) **Qualified Soils Evaluator** - any person who possesses a valid certificate of registration from the State of Ohio as a Sanitarian, a soil specialist, a professional soil scientist certified by the association of Ohio Pedologists or a soil scientist certified by the American Society of Agronomy's ARCPACS. This person must be capable of evaluating soils in accordance with ASTM D 5921 or approved alternative.

PPP) **Qualified Surveyor** - any person who possesses a valid certificate of registration as a professional surveyor from the State of Ohio Board of Registration for Professional Engineers and Surveyors.

QQQ) **Rebuilt Dwelling/Structure** – any dwelling or structure which has been or will be demolished, or partly demolished, so that the resulting dwelling or structure has greater than fifty percent change to the walls, by adding and/or removing interior walls, including but not limited to, full walls, half walls, knee walls, doorways, archways, thresholds, closets, etc. within a three year timeframe, or any dwelling or structure which the location of such dwelling or structure will be moved. The general intent of the owner, as determined by the health district, is to build, or remodel or relocate a structure or, a one, two, or three family dwelling.

RRR) **Redoximorphic Feature** - a feature formed in the soil matrix by the processes of reduction, translocation and oxidation of iron and manganese compounds in seasonally saturated soil.

SSS) **Restrictive Soil Layer** – any soil such as clay, silty clay, or sandy clay which has platy, weak, or massive structure; any soil layer containing greater than or equal to 45% clay; any soil such as, silt loam, silty clay loam, clay loam, or sandy clay loam which has platy or massive structure; any soil such as loam, fine sandy loam or very fine sandy loam with

platy structure; any soil such as coarse sandy loam, or sandy loam with moderate or strong platy structure; any soil with a compacted or dense layer such as a fragipan; a soil layer with a brittle and firm or very firm consistence, a soil layer having a massive structure or having a platy structure inherited from bedrock; or any other soil layer similarly restricting vertical flow.

TTT) **Safety Hazard –** any condition of an STS, a component thereof, or condition caused by an STS or component thereof which could cause bodily injury or death including but not limited to:

1) Components have or are about to collapse;

2) Component lids are missing, are substantially cracked / deteriorated, or are unsecured;

3) Electrical or mechanical devices are installed or are maintained in such a way which could cause electrocution.

UUU) **Sanitary Regulations** - the regulations adopted by the Board of Health as Regulation 529.

VVV) **Sanitary Sewerage System** - means any public or community sewerage collection system conveying sewage to a central sewage treatment plant.

WWW) **Seasonal, Perched, or Mounded Water Table** - the shallowest depth of soil, unconsolidated material, or bedrock which is saturated with water during a season, a temporary period of time, or as a temporary condition.

XXX) **Secured Cover** - an easily accessible removable cover or manhole designed to prevent unwarranted or unauthorized access which does not present a safety hazard.

YYY) **Septic Tank** - any watertight, covered receptacle designed and constructed to receive the discharge of sewage from a building sewer, to provide primary treatment, and to discharge the effluent from settled sewage.

ZZZ) **Sewage** - any liquid waste containing animal or vegetable matter in suspension or solution from water closets, urinals, lavatories, bathtubs, laundry tubs or devices, floor drains, drinking fountains, or other sanitary fixtures, and may include liquids containing chemicals in solution.

AAAA) **Sewage Tank** - any watertight tank designed to retain sewage and includes, but is not limited to, septic tanks, aerobic treatment units, grease traps, and dosing tanks.

BBBB) **Sewage Tank Cleaner** - any person who engages in the collection, transportation, and disposal of the contents of sewage tanks or privies.

CCCC) **Sewage Treatment System (STS) –** a household sewage treatment system, a small flow onsite sewage treatment system, or both, as applicable.

DDDD) **Small Flow Onsite Sewage Treatment System (SFOSTS) -** any system or part thereof, other than a household sewage treatment system, that is designed to receive and treat not more than one thousand gallons of sewage per day and that does not require a national pollutant discharge elimination system permit issued under section 6111.03 of the revised code or an injection well drilling or operating permit issued under section 6111.043 of the revised code. An SFOSTS does not hold, treat, or disperse industrial waste or storm water for industrial activities. The normal use of housekeeping products does not constitute industrial waste. Any waste prohibited for introduction into an SFOSTS by the Ohio Environmental Protection Agency regulations shall be source separated and regulated by Ohio Environmental Protection Agency. A structure or structures served by a SFOSTS shall include but is not limited to:

1) Vacation rental cabins with multiple cabins served by an STS.

2) A dwelling with an accessory building both served by an STS where the accessory building may be open to the public and is used by more than the residents of the dwelling.

3) More than one dwelling, or arrangements such as a dwelling and an accessory building with a bathroom and additional conditioned (heated and/or cooled) rooms or spaces.

4) A dwelling with a home business that may be open to the public.

EEEE) **Soil Loading Rate (SLR)** - the daily volume of effluent applied per unit area over in situ soil expressed in gallons per day per square foot. The SLR is one factor used to determine the area of a soil absorption component.

FFFF) **Soil Absorption Component** - the STS component used for dispersal of effluent to the soil. Examples of dispersal methods include, but are not limited to, leaching trenches, at-grades, modified mounds, mounds, and drip distribution.

GGGG) **Soil Depth Credit** - the use of the design mechanisms of sand fill elevation, pretreatment, and/or distribution as substitutes for in situ soil treatment to compensate for inadequate vertical separation distance between the infiltrative surface and the limiting condition.

HHHH) **Soil Survey** - a general term for the systematic examination of soils in the field and in the laboratory.

IIII) **Structure –** any building or place, other than a one, two or three family dwelling, which generates sewage or is proposed to generate sewage or that is required to have facilities which generate sewage.

JJJJ) **Subdivision** - that which is defined by Section 711 of the Ohio Revised Code, as that statute may from time to time be amended.

KKKK) **Suspended Solids (TSS)** - solids which are physically suspended in a water sample, being too heavy to float and too light to settle and will not pass through a membrane filter with a pore size of 1.2uM.

LLLL) **Suitable In Situ Soil** – in situ soil which does not contain a restrictive soil layer, bedrock, normal ground water table, seasonal or perched water table, or other limiting condition.

MMMM) **Timed Dosing** - a mechanism that attenuates peak flows and allows for equal controlled dosing intervals over a 24-hour period.

NNNN) **UL** – Underwriters Laboratories Inc.

OOOO**) Vertical Separation Distance** - the depth as measured from the bottom of the infiltrative surface of the distribution system of the soil absorption component to the shallowest limiting condition.

SECTION 529.02: GENERAL SEWAGE TREATMENT REQUIREMENTS

A) The design, construction, installation, location, maintenance, monitoring, operation, and abandonment of STS shall comply with this regulation and shall conform with engineering practices and treatment principles acceptable to the Hamilton County General Health District, to the Ohio Department of Health, and when applicable, to the Ohio Environmental Protection Agency.

B) Any existing dwelling which is not connected to a sanitary sewerage system shall be provided with its own separate HSTS which is approvable by the Hamilton County General Health District as not causing a nuisance or safety hazard. Every new dwelling and existing dwelling needing a replacement system which is not connected to a sanitary sewerage system shall be provided with its own separate HSTS which meets the requirements of this regulation and any design standards adopted hereunder, and such new dwelling shall not be occupied until the Hamilton County General Health District approves the construction and operation of the HSTS.

Any existing structure which is not connected to a sanitary sewerage system shall be provided with an SFOSTS which is approvable by the Hamilton County General Health District as not causing a nuisance or safety hazard. Every new structure and existing structure needing a replacement system which is not connected to a sanitary sewerage system shall be provided with an SFOSTS which meets the requirements of this regulation and any design standards adopted hereunder, and such new structure shall not be occupied until the Hamilton County General Health District approves the construction and operation of the STS.

C) Each HSTS shall serve only one dwelling on one parcel, and shall be located on the same parcel as that on which the dwelling or accessory building it serves is located. A SFOSTS may serve multiple dwellings or structures. In the case where two or more dwellings or structures are served by a SFOSTS, the entire SFOSTS shall be owned and operated by one person. If any portion of a SFOSTS is located on a separate parcel on which the structure(s) or dwelling(s) are located, a permanent recorded easement and legal STS ownership records shall be required.

D) When a dwelling, accessory building, or structure is served by an STS, the entire flow from the sanitary plumbing shall be conveyed to that STS.

E) Except for in cases where the owner of the SFOSTS contained within a permanent recorded easement is responsible for proper design, installation, operation, maintenance, monitoring, service, repair, replacement and abandonment of an STS, or where a different legal ownership record exists for the proper design, installation, operation, maintenance, monitoring, service, repair, replacement and abandonment of an SFOSTS, then, the owner of the real property on which a building, dwelling or structure is served by an STS shall be responsible for the proper design, installation, operation, maintenance, monitoring, service, repair, replacement and abandonment of the system.

F) No STS or part thereof shall create a nuisance or safety hazard.

G) No person shall discharge, release, or permit to be discharged or released, treated or untreated sewage, the overflow drainage or contents of a sewage tank, or other putrescible, impure, or offensive wastes into an abandoned water supply, well, spring, or cistern or into a natural or artificial well, sink hole, crevice, or other opening extending into limestone, sandstone, shale, or other rock formation, or directly into the normal ground water table.

An SFOSTS shall not discharge to an abandoned well, drainage well, a dry well or cesspool, a sink hole or other connection to ground water. If classified as a Class V injection well, an SFOSTS shall comply with 40 C.F.R. 144 (as published in the July 1, 2005 Code of Federal Regulations) and the registration requirements pursuant to rule 3745-34-13 of the Administrative Code.

H) Except as provided in Section 529.12 of this Regulation, no person shall discharge or release, or permit or cause to be discharged or released, treated or untreated sewage, the drainage or contents of a sewage tank, or other putrescible or offensive wastes to surface waters, onto the surface of the ground, into any street, road, alley, open excavation, ditch, drainageway, or underground drain.

I) No STS shall be installed on any property when a sanitary sewerage system is available.

J) Whenever a sanitary sewerage system is or becomes available to the property, the building drain shall be directly connected to such sanitary sewerage system and the STS shall be properly abandoned.

K) Water from the roof, foundation drains, cistern overflows, subsurface drainage tiles, storm water drains, and clear water drains shall not be discharged into any part of an STS.

L) Plastics in any form, wet strength paper towels, cloth of any kind, rubber products, throw-away baby diapers, feminine hygiene products, cigarette stubs, sand, grit, coffee grounds, excess cooking oils and greases, solvents, paints, caustic or oily liquids or materials, kerosene, gasoline, motor oil, floor waxes or any other wastes known to adversely affect the STS or cause contamination to groundwater resources shall not be deposited or flushed in plumbing fixtures, nor shall they otherwise be introduced into a building sewer or STS.

M) No STS or parts thereof shall be installed in any area having a one percent or greater chance of flooding (the 100 year flood plain).

N) The daily design flow and waste strength for STS shall comply with the following general requirements unless otherwise specified in this regulation:

1) Except as provided in Paragraphs (N)(2) and (N)(3) of this Regulation, the daily design flow of an HSTS shall be a peak flow of one hundred twenty gallons per

day per bedroom. The peak flows shall not be reached or exceeded on a routine basis, and therefore, average flows of sixty percent of the daily design flow shall be considered as the normal expected flow rate without harming the system or treatment quality. No HSTS shall be designed or installed to treat and disperse less than 240 gallons per day. Except as specified in Paragraph (N)(7), a dwelling and associated accessory building(s) with conditioned (heated and/or cooled) living space shall have at least the following minimum design flow rates based on the total square footage of the dwelling plus any additional square footage from conditioned living area in an accessory building.

a) > 1,500 sq. ft. and }î œëðð sq. ft. = 360 gallons per day;

b) > 2,500 sq. ft. and }í œëðð sq. ft. ã 480 gallons per day;

c) > 3,500 sq. ft. and }ì œëðð sq. ft. ã 600 gallons per day;

d) > 4,500 sq. ft. and }éœðð sq. ft. ã éî ð gallons per day;

e) > 7,000 sq. ft. and }çœëðð sq. ft. ã èì ð gallons per day;

f) > 9,500 sq. ft. and }ï î œðð sq. ft. ã çêð gallons per day;

g) > 12,000 sq. ft. ã ï œðð gallons per day;

2) An increase in the HSTS daily design flow of sixty gallons per day per fixture may be required by the district due to significant additional flows from special use fixtures, such as spas, whirlpools, high capacity or multiple head showers, water treatment devices, or other large usage fixtures.

3) An increase in the HSTS daily design flow may be required by the district due to additional residents contributing to the HSTS flows or evidence of higher water usage within a dwelling.

4) Wastewater shall be judged to be typical residential wastewater following primary treatment in an HSTS when the total suspended solids (TSS) content does not exceed one hundred fifty milligrams per liter, the five-day biochemical oxygen demand (BOD_5) does not exceed two hundred fifty milligrams per liter, or the content of fats, oils, and greases does not exceed twenty five milligrams per liter. When waste strength is expected to exceed or is demonstrated to have exceeded any of these upper range values for typical residential wastewater, the district may require additional pretreatment.

5) The daily design flow estimate for a SFOSTS shall comply with the following general provisions:

a) The daily design flow for an SFOSTS shall be determined in accordance with Table A-1 of rule 3745-42-05 of the Administrative Code. For a SFOSTS with periodic large daily flows that are stored to avoid exceeding the one thousand gallon per day treatment limit, the peak daily design flow shall be greater than the average of the daily flows and no actual daily flow shall exceed three thousand five hundred gallons. Notwithstanding the requirements of paragraph (N)(5)(b) and (N)(5)(c) of this section, the flow rate values found in Table A-1 of rule 3745-42-05 of the Administrative Code shall be considered peak flows which shall not be reached or exceeded on a routine basis, and therefore, average flows of sixty percent of the daily design flow shall be considered as the normal expected flow rate without harming the system or treatment quality.

b) An increase in the daily design flow for an SFOSTS shall be required when there is an indication that the flows established in accordance with paragraph (N)(5)(a) of this section will be exceeded.

c) A reduction in daily design flow for an SFOSTS may be approved when the information submitted indicates conditions that justify reduced flow based on criteria found in rule 3745-42-05 of the Administrative Code or similar criteria approved by the Health District.

6) The waste strength estimate for a SFOSTS shall be determined for design purposes in accordance with the following general provisions:

a) When the waste strength for an SFOSTS is expected to exceed or has exceeded typical residential waste strength, the design plan shall include loading calculations using values in accordance with Table A-1 of rule 3745-42-05 of the Administrative Code. Any variation from the loading table values shall be justified in the sanitation site plan required in section 529.04 of this regulation including waste strength characterization information.

b) Additional pretreatment shall be provided to assure that the SFOSTS soil absorption component receives a waste strength within the range of typical residential sewage. The method of pretreatment to reduce waste strength shall be justified in the sanitation site plan.

c) When an external grease interceptor is a component of the proposed pretreatment to reduce waste strength, the external grease interceptor shall be located, designed, and installed in a manner that will allow access for inspection and maintenance, including the following:

i) A source segregated inlet line;

ii) Sized to account for flow volume and temperature; and

iii) Watertight access risers extended to grade with secure covers.

7) The daily design flow rate specified in Paragraph (N)(1) calculated based on total conditioned living area shall not require the sewage treatment system flow rate to increase more than 360 gallon per day above calculating the flow rate based on bedrooms plus additional flows discussed in Paragraph (N)(2) and (N)(3) of this Regulation.

O) Lots on which STS for dwellings or structures are to be installed shall be of suitable topography, soil, and area to permit compliance with this Regulation.

P) Except as provided in paragraph (C) of this regulation where SFOSTS may be installed within a permanent recorded easement, suitable separate area on the same lot shall be available to provide for the complete relocation and replacement of the STS. In cases where an SFOSTS is installed with a permanent recorded easement, suitable separate area shall be available to provide for the complete relocation and replacement of the SFOSTS on the same lot as the structure it serves or on a separate lot within a permanent recorded easement.

Q) Select STS components shall maintain the minimum isolation distances specified in Table #1 of this Regulation. Additionally, a SFOSTS shall not be sited within the sanitary isolation radius of a public water system as determined in accordance with rule 3745-09-04 of the Administrative Code. A SFOSTS shall have additional design and/or management controls when sited within the inner management zone of a drinking water source protection area determined to be highly susceptible to contamination by the Ohio Environmental Protection Agency source water assessment and protection program for a community or non-transient noncommunity public water system as defined in rule 3745-81-01 of the administrative code.

R) No STS shall have its daily flow rate increased above the design flow rate by exceeding the living space square footage requirements of paragraph (N)(1) of this section when adding a room addition or accessory building with conditioned living space, by adding bedrooms, residents, special use fixtures, or structures consistent with Paragraph (N) of this Section, or otherwise make changes to a structure, within a structure, to the occupancy of a structure and/or to the use which the structure and STS was designed which may increase waste strength or flow in accordance with Table A-1 of rule 3745-42-05 of the Administrative Code without altering or replacing the STS consistent with the requirements of this Regulation, unless the STS was designed to handle the additional flows and treatment quality and/or soil absorption would not suffer.

S) No person shall change the use of or occupancy of a structure, or begin remodeling, rebuilding or construction of a dwelling, structure, room addition, accessory building, detached garage, deck, or swimming pool, surface water impoundment, well, geothermal heating/cooling systems, or add hardscapes included but not limited to driveways, patios, walls, or walkways, at any property served by, or required to be served by, an STS

without first having filed application, submitting all requested relevant information and having received approval from the board of health, through its authorized representative. Upon receipt of a completed application, an inspection will be conducted by a health district representative to verify that:

1) The sewage treatment system is in compliance with the requirements of sections 529.06 and 529.06.1 of this regulation;

2) The conditions of paragraph (T) of this section have been completed;

3) The proposed construction will not adversely impact the system's future operation and/or maintenance or the system's replacement area; and

4) The system is otherwise in compliance with the requirements of this regulation.

T) Applicants proposing to change the use of or occupancy of a structure, remodel a dwelling or structure or who are proposing to add room additions, accessory buildings, structures, detached garages, decks, swimming pools, surface water impoundments, wells, geothermal heating/cooling systems, or any hardscapes for any property served by or required to be served by an STS shall have that system's components permanently exposed by bringing lids to grade with risers. System components include but are not limited to sewage tank(s), drop box(es), sample well(s), disinfection unit(s), distribution box(es), dry well(s), and cesspool(s).

U) No existing STS shall be used for a new dwelling/structure, or rebuilt dwelling/structure, which does not meet the requirements of this Regulation.

V) When discontinuing use of an STS, the owner must obtain a sewage treatment system abandonment permit, pay the permit fee, complete the abandonment procedures set forth in Table #2 of Regulation 529, and call for inspection.

SECTION 529.02.1: SITE EVALUATIONS

A) Site evaluations required under Sections 529.03 and 529.04 of Regulation 529 shall be conducted in conformance with this Section and ASTM D 5879 or other guidance documents. The site evaluation must contain detailed soil descriptions performed in accordance with ASTM D 5921 or other approved description method, and the following:

1) A site plan that includes the following information:

a) The dimensions with courses and distances of the lot or proposed lot and a scaled drawing of the area proposed for the siting of the dwelling or structure and suitable STS areas;

b) The location of any existing or proposed hardscapes, underground utilities, easements, drain tiles, dwellings, structures and appurtenances such as other buildings, driveways, or pools;

c) Scale, north arrow, and date evaluated;

d) The location of all existing or proposed public and private water systems including the water service lines, surface water bodies/impoundments, streams, ditches, drainageways, wells, and drain tile, on the lot and within one hundred and fifty feet (150) of the lot boundaries;

e) Address of the property along with the tax parcel number as assigned by the Hamilton County Regional Planning Commission. Name of adjacent street and centerline distance to closest intersection;

f) The location of any existing or proposed sanitary sewers within 500 feet of the lot boundaries;

g) Any zoning setback limits;

h) Subdivision name and/or owner's name, address, and phone number;

i) Road right-of-way and easement areas with boundary descriptions;

j) Preparer's name, address, and phone number; and

k) Accurate topographic contours at two (2) feet intervals or less.

2) Written designations on the site plan by the qualified STS designer conducting the site evaluation of the suitable STS areas on the lot and the location of all soil descriptions for these areas.

3) Identification of all site and soil limitations and all critical information to be addressed in STS design, including the following:

a) Landscape position, dimensions, percent slope, vegetation, and drainage features for the suitable STS areas on the lot;

b) Detailed soil descriptions adequate to document the soil conditions;

c) Significant hydrogeologic features; and

d) Risk factors associated with the site.

4) On existing lots proposed for new construction, rebuilding, remodeling, or dwelling or structure replacement, additional documentation from the qualified STS designer must be given to the District when the evaluator determines that a complete soil absorption system is not feasible.

B) The evaluation required in paragraph (A) of this section shall be conducted by a qualified STS designer or qualified soils evaluator working with a qualified STS designer.

SECTION 529.03: SEWAGE TREATMENT SYSTEMS IN NEW SUBDIVISION DEVELOPMENTS

A) Any person proposing to create one or more new parcels of less than five (5) acres in total land area shall submit to the Hamilton County General Health District, for approval, plans clearly showing that the provisions of rules 3701-29-01 to 3701-29-21 of the Ohio Administrative Code and Sanitary Regulation 529 of the Hamilton County General Health District can be adequately met before any such parcel is created.

B) No person shall install an STS on any new parcel created after the effective date of these Regulations unless it is considered to be impractical or inadvisable by the Hamilton County General Health District and the Ohio Environmental Protection Agency to install a sanitary sewerage system.

C) Any person or firm planning to create one or more parcel(s) for which STS are proposed shall, as required by the Health Commissioner, supply evidence to show why it is impractical or inadvisable to connect to a sanitary sewerage system.

D) If a connection to a sanitary sewer system is determined by the Health Commissioner to be inadvisable or impractical, easements described by metes and bounds shall be recorded for each parcel to facilitate future sanitary sewerage construction.

E) The Hamilton County General Health District shall consider any sanitary sewerage system located within 500 feet of a proposed subdivision to be practical and advisable for extension and connection thereto unless written evidence to the contrary is supplied.

F) In anticipation of a subdivision of land, a developer may submit preliminary plans or concepts to the Hamilton County General Health District for an informal plan review.

G) Any person desiring to obtain formal approval of his or her proposed new parcel(s) shall complete an application for review and pay the applicable fees. The following information shall be submitted with the application and shall be completed at the site before review:

1) A preliminary site plan meeting the requirements of Section 529.02.1, excluding the tax parcel numbers and addresses, drawn on one or more sheets of standard size at a scale of one inch equals 100 feet or larger (i.e., one inch equals 60', or 50', etc.) and containing:

a) The total land area to be used

b) The proposed location and size of all lots

c) The proposed primary and replacement system type, size, and location with their sizing design calculations attached as specified by the qualified STS designer

2) The location of each proposed property must be marked at the site with proposed lot numbers present. These lot numbers must match those on the preliminary site plan.

3) The proposed property corners must be roughly marked with flags. Additionally, the proposed lot lines in close proximity to the primary and replacement STS locations must be roughly marked with flags.

4) The proposed primary and replacement STS areas must be accurately marked with flags following approved installation layout procedures.

5) The soil sample locations must be accurately marked with flags which contain numbers corresponding to the soil descriptions given to the Health District.

6) At least four (4) additional markers shall be roughly placed to outline the proposed dwelling, accessory building, and/or structure site.

H) No legal survey of the proposed parcel(s) will be required at the application/review stage.

I) If it is not apparent to the Health District that the proposed primary and replacement STS will fit on the proposed lot(s), then a complete STS design, prepared by a qualified STS designer and meeting the requirements of Section 529.04 of this Regulation, will be required.

J) Upon completion of preliminary plan review and approval, the following information shall be submitted and shall be completed at the site before review:

1) Final individual site plan maps, meeting the requirements of Section 529.02.1 and being drawn and stamped by a qualified professional surveyor, shall be prepared at a scale of one inch equals 50 feet or less (i.e., 40 feet, 30 feet, etc.) For each proposed parcel and containing the following:

a) The total land area to be used;

b) The proposed location and size of all lots; and

c) The qualified STS designer's proposed primary and replacement system type, size, and location with their sizing design calculations attached.

2) The location of each proposed property must be marked at the site with assigned lot numbers present. The lot numbers must match those on the final individual site plans.

3) The proposed property corners must be accurately marked by the surveyor. Additionally, the proposed lot lines in close proximity to the primary and replacement STS locations must be accurately marked by the surveyor.

4) The proposed primary and replacement STS areas must be accurately marked with flags following approved installation layout procedures.

5) The proposed primary and replacement STS areas must be caution taped off to prevent disturbance during construction of the site.

6) The soil sample locations must be accurately marked with flags which contain numbers corresponding to the soil descriptions given to the Health District.

7) At least four (4) additional markers shall be accurately placed by the surveyor to outline the proposed dwelling, accessory structure, and/or structure site.

K) No new parcel shall be allowed to be created when site conditions will require the use of an STS that necessitates discharge of effluent to the surface of the ground from any primary or replacement system.

L) No new parcel shall be allowed to be created which will require that the proposed primary or replacement STS to be stacked, thus violating the landscape linear loading rate, without at least 40 feet of separation between the soil absorption components.

M) No new parcel shall be allowed to be created which will allow the primary or replacement soil absorption system to come within 40 feet of a downslope property line, dwelling, structure, surface water impoundment or any accessory building or hardscape which may restrict flow.

N) The Hamilton County General Health District may approve any lot split when the requested pertinent information indicates that provisions of Regulation 529, any approved design or installation requirements, and Ohio Administrative Code 3701-29-01 to 3701-29-21 can be met.

O) The Hamilton County General Health District may deny any lot split if the information on the application, site evaluation, design, or site plan is incomplete, inaccurate, or indicates that the provisions of Regulation 529, any approved design or installation requirements, or Ohio Administrative Code 3701-29-01 to 3709-29-21 cannot be met; or if the requested in field markings are inaccurately or incompletely marked.

P) Final property deeds for each proposed parcel or the Record Plat Map shall be submitted to the Health District with the final individual site plans. These documents will be stamped as approved if all of the requirements of Regulation 529 are met and the following is added to the property's deed or the Record Plat Map:

1) The Hamilton County Board of Health Sewage Code Regulation 529 requires a registered maintenance provider contract to be in place for monitoring, maintaining, and providing service for the STS located on this property. This registered maintenance provider contract is required for any property owner as long as the STS is in operation as the legally approved sewage treatment system for the property. If a registered maintenance provider contract is discontinued, the registered maintenance provider is required to submit this information, in writing, to the Hamilton County General Health District, which places the STS out of compliance with Sewage Code Regulation 529. This, and any other STS performance information, shall be considered disclosable at property transfers. The property owner may remove this information from the property deed with an approval letter from the Hamilton County General Health District's Health Commissioner, after the STS is properly abandoned, any outstanding fees are paid, and the property is connected into a sanitary sewer.

SECTION 529.04: APPLICATIONS, STS DESIGN, AND SANITATION SITE PLANS

A) Prior to issuance of an Permit to Install or Alteration Permit, an Application for Approval to Construct/Replace an STS or an Application for an STS Alteration shall be submitted to and approved by the Hamilton County General Health District.

B) Application for Approval to Construct/Replace shall be made in writing on a form provided by the Hamilton County General Health District and shall be accompanied by the following documents:

1) Tax Parcel number;

2) One copy of the latest recorded deed to the real property on which the STS is to be installed and any other documents relating to the current ownership of the property or STS;

3) A copy of any recorded easements or other documents required by Regulation 529;

4) Four copies of the proposed sanitation site plan;

5) A copy of the floor plan matching that which will be submitted to the building department showing the proposed dwelling rooms and designated use. Information on the sources of sewage from the dwelling or structures to be served by an STS including plumbing plans showing fixture details and other information as needed;

6) A copy of all of the proposed STS design calculations;

7) A copy of all soil reports and site evaluation conducted by the qualified STS designer; and

8) A copy of the professional surveyor's stamped site plan matching that which will be submitted to the building department.

C) Except as provided in paragraph (E) of this section, the sanitation site plan for an STS intended to serve a dwelling, structure or other building shall:

1) Be conducted in accordance with Section 529.02.1 of this Regulation and shall be prepared at a scale of one inch equals 50 feet or less (i.e., 40 feet, 30 feet, etc.);

2) Be submitted on a paper size of 11" x 17" or less;

3) Contain the exact locations and areas for the proposed primary and replacement STS design;

4) Contain accurate drawings and descriptions of the STS components to be installed, which include but are not limited to, dimensions, sizes, locations, volumes, model

numbers, elevations, installation instructions, etc. This information must be submitted on at least three sheets of 11" x 17" or less paper laid out consistent with the following:

a) A plan view of the entire site with all important features and STS components identified, and containing dimensions of isolation distances from STS components to items listed in Table 1;

b) A plan and/or profile view of proposed system components which accurately represents their size and installation requirements;

c) An elevation plan showing the profile view of all proposed STS components which accurately represents their size and installation elevations;

5) Show grade elevations (existing and proposed) for the corners of the dwelling, structure, or accessory building to be served and the existing and proposed grade elevations for the lot development;

6) Show basement/subgrade, first, and second floor final construction elevations.

D) Before submitting an application to construct for a proposed new or rebuilt dwelling/structure which will be using an STS, the property shall be properly marked with a sign at the street containing the property address and the owner's name. Additionally, the following shall be completed for review and approval/disapproval by the Health District:

1) The location of all necessary property corners must be marked at the site by a professional surveyor. Where required, easements/right-of-ways must be accurately marked at the site by the surveyor.

2) The lot lines in close proximity to the proposed primary and replacement STS locations must be accurately marked by the surveyor.

3) The proposed primary and replacement STS areas must be accurately marked with flags by the qualified STS designer. Layout must follow approved installation layout procedures.

4) The proposed primary and replacement STS areas must be caution taped off to prevent disturbance during construction of the site. Where there may be increased risk to negatively affect the proposed primary and/or replacement area during site construction, addition precautions may be required by the Health District prior to or after the application approval.

5) The soil sample locations must be accurately marked with flags by the STS designer. These flags must contain numbers corresponding to the soil descriptions given to the Health District.

6) The perimeter of the proposed dwelling(s), structure, and other significant items listed in Table 1 are accurately marked at the site by the surveyor or other qualified individual.

E) For an existing dwelling for which the HSTS must be altered or replaced because of a component or STS failure, the proposed STS construction shall be shown by a scaled drawing prepared by a qualified individual on a base map provided by the Hamilton County General Health District, or the qualified individual.

F) Sanitation site plans shall be prepared by a qualified STS designer.

G) The Application for Approval to Construct/Replace or Application for an STS Alteration and the sanitation site plan shall be valid for one year from the date of approval.

H) Any fee established for an Application for Approval to Construct/Replace or Application for an STS Alteration by law or authority of law shall accompany the application.

I) The Hamilton County General Health District may approve an Application to Construct/Replace or Application for an STS Alteration when the requested pertinent information indicates that provisions of Regulation 529, any approved design or installation requirements, and Ohio Administrative Code 3701-29-01 to 3701-29-21 can be met.

J) The Hamilton County General Health District may deny an Application To Construct/Replace or Application for an STS Alteration if the information on the application, site evaluation, design, or sanitation site plan is incomplete, inaccurate, or indicates that the provisions of Regulation 529, any approved design or installation requirements, or Ohio Administrative Code 3701-29-01 to 3709-29-21 cannot be met; or if the requested in field markings are inaccurately or incompletely marked; or the proposed STS primary and/or replacement site is not properly protected.

K) Application for an STS Alteration shall be made in writing on a form provided by the Hamilton County General Health District, and, where required, shall be accompanied by any or all of the items or documentation requested by the district described in this Section.

L) A secondary treatment component of an STS that would require significant replacement of the aggregate or piping shall be required to obtain an application to construct or replace and be replaced in accordance with these regulations.

SECTION 529.05: ALTERATION AND INSTALLATION PERMITS

A) No person shall install or alter an STS without first obtaining a Permit to Install or Alteration Permit.

B) The Permit to Install or Alteration Permit shall be obtained by a registered installer prior to the start of construction or alteration of the STS.

C) Any fee established for a permit by law or authority of law shall accompany the Application for Permit to Install or Alteration Permit.

D) Permits to Install and Alteration Permits shall be valid until the construction of the STS is completed or for one year from the date of issuance, whichever occurs first.

E) The Hamilton County General Health District may suspend or revoke a Permit to Install or Alteration Permit at any time it determines that conditions existing on the premises have been altered in a manner which prevents the primary or replacement system from being installed as specified on the approved sanitation site plan, or if the requirements of Regulation 529 cannot be met. Whenever suspension is warranted, the Hamilton County General Health District shall serve the owner of the property or installer with a notice of suspension. During a suspension period, the owner or installer shall show to the satisfaction of the Hamilton County General Health District how the altered conditions can be changed to conform with the approved sanitation site plan and any approved design or installation requirements, or how the sanitation site plan can be revised to accommodate the conditions in a manner which will allow the system to be installed to meet all requirements set forth in Regulation 529 and any approved design or installation requirements.

F) The Hamilton County General Health District may revoke a Permit to Install or Alteration Permit whenever the owner or installer fails to show a satisfactory plan for overcoming the altered conditions or whenever information on the Application for Approval to Construct or Application for an STS Alteration is found to be inaccurate or whenever a permit has been issued in error.

G) When the Permit to Install or Alteration Permit has expired or has been revoked by the Hamilton County General Health District, the installation or alteration of the system shall not commence or resume unless new application and/or permit fees have been submitted and a new Permit To Install or Alteration Permit has been obtained.

H) The Hamilton County General Health District may issue a Permit to Install or Alteration Permit when the pertinent information indicates that provisions of Regulation 529, any approved design or installation requirements, and Ohio Administrative Code 3701-29-01 to 3701-29-21 can be met.

I) The Hamilton County General Health District may deny a Permit to Install or Alteration Permit if the information on the application, site evaluation, design, or sanitation site plan

is incomplete, inaccurate, or indicates that the provisions of Regulation 529, any approved design or installation requirements, or Ohio Administrative Code 3701-29-01 to 3709-29-21 cannot be met.

J) The installer shall notify the District, at Health District specified time periods during the installation or alteration of the system. The District may inspect the STS to determine if that stage of the STS has been installed in compliance with this Regulation, any approved design or installation requirements, the Ohio Administrative Code, and the terms of the Permit. The District may then approve that stage of STS installation if it is determined to be in compliance with the requirements of this Regulation, any approved design or installation requirements, the Ohio Administrative Code, and the terms of the Permit.

SECTION 529.06: PROVISIONAL OPERATION PERMITS

A) All STS containing electric motors and/or other electrical/mechanical parts shall be subject to an annual inspection by the Hamilton County General Health District to verify the proper maintenance and operation of the system. A one-year provisional Operation Permit will be issued if:

1) The sewage system is operating properly and meets the requirements of paragraph (F) of this section;

2) The requirements of Section 529.06.1 of this Regulation are met; and

3) All inspection fees have been paid.

B) All other non-electrical and/or non-mechanical STS shall be subject to an inspection once every five years. If the sewage system is operating properly and the owner of the sewage system has paid the provisional Operation Permit fee, a five-year provisional Operation Permit will be issued.

C) The fees for the provisional Operation Permit and for reinspection may be as established by the Board of Health. The payment of this fee and all reinspection fees shall be made at the time of notification or within 30 days following the date that the bill is sent to the owner. Unpaid fees may be collected through an action of law filed against the owner.

D) If an inspection of any STS reveals an operational problem, failure to meet the inspection criteria, a safety hazard, failure to comply with inspection or dye testing requests or if an effluent sampling well needs to be installed, an order shall be issued to the owner of the sewage system to take the appropriate remedial action to make the sewage system operate properly, come into compliance with the inspection criteria, eliminate the safety hazard, allow the inspection or dye test to occur or to install a sampling well to determine the systems operating status. If the owner of the sewage system refuses or fails to take remedial action, injunctive, criminal, or other appropriate relief will be pursued to enforce the correction of the operational problem, compliance with the inspectional criteria, elimination the safety hazard, inspection or dye testing of the STS or installation of an effluent sampling well.

E) Upon the first and all subsequent reinspections of an improperly operating STS which is under a maintenance contract with a repair/service company registered and bonded with the Hamilton County General Health District, a reinspection fee established by the Board of Health will be assessed to the owner. Upon the first and all subsequent reinspections of an improperly operating STS which is not under a maintenance contract with a repair/service company registered and bonded with the Hamilton County General Health District, a reinspection fee established by the Board of Health will be assessed to the owner.

F) The minimum operation and inspection criteria for the disapproval for all STS shall be as follows:

1) Aerobic/Electrical Systems Installed Before December 10, 2004:

a) Missing component(s).

b) Inoperable component(s).

c) Motor not drawing air, or insufficiently drawing air.

d) Broken lid(s) or riser(s), i.e., piece missing or broken to the extent that it allows entrance of surface water, or lid cannot be lifted without collapse; decayed metal grating.

e) Flooded filter, filter bypassing or close to bypassing.

f) Evidence of septic sewage, i.e., black, odorous.

g) Evidence of electric service problem.

h) Components are not functioning in accordance with design standards.

i) Discharge creates a public health nuisance.

j) An access riser has not been brought to grade over each component requiring maintenance.

k) An effluent sampling well is not present when an effluent sample is needed to determine the operating status of the system.

l) An incorrect or unapproved component(s) have been installed which have not been reviewed and approved as equivalent to the original equipment manufacturer (OEM) component.

m) Incorrect timer settings for proper sewage treatment exist.

n) The system has been altered/replaced without approval.

o) Grey water not connected to the STS.

p) STS is causing a safety hazard.

2) Non-Electrical/Non-Mechanical Systems Installed Before December 10, 2004:

a) STS is creating a public health nuisance.

b) An effluent sampling well is not present when an effluent sample is needed to determine the operating status of the system.

c) The system has been altered/replaced without approval.

d) Grey water not connected to the STS.

e) STS is causing a safety hazard.

f) Component is not draining properly.

g) STS fails a dye test.

h) Broken lid(s) or riser(s), i.e., piece missing or broken to the extent that it allows entrance of surface water, or lid cannot be lifted without collapse; decayed metal grating.

i) Components are not functioning in accordance with design standards.

j) An incorrect or unapproved component(s) have been installed which have not been reviewed and approved as equivalent to the original equipment component.

k) For systems installed after 1993, an access riser has not been brought to grade over each component requiring maintenance.

3) Electrical / Non-Electric / Non-Mechanical Systems Installed On Or After December 10, 2004:

a) The system contains any broken or missing components, or components have been covered which require routine inspection or maintenance.

b) The system is improperly maintained.

c) A registered maintenance provider contract has not been obtained.

d) The system is not operating as designed.

e) The system has been altered/replaced without approval or incorrect or unapproved component(s) have been installed which have not been reviewed and approved as equivalent to the original equipment manufacturer (OEM) component.

f) The effluent quality is not maintained or NPDES effluent samples have not been submitted in accordance with the NPDES permit issued by the Ohio EPA.

g) The system is consistently operated above its design flow rate.

h) Incorrect timer settings for proper sewage treatment exist.

i) The system has been altered/replaced without approval.

h) Grey water not connected to the STS.

i) STS is causing a safety hazard.

j) Component is not draining properly.

k) STS fails a dye test.

l) Any other condition which may adversely affect the treatment, absorption, or longevity of the STS.

G) No person shall operate an STS without a valid provisional operation permit obtained from the Board of Health.

H) The Health District may suspend or revoke any provisional operation permit for failure to comply with Regulation 529. A fee established by the Board of Health shall be paid by any owner of an STS who has had their provisional Operation Permit suspended or revoked.

SECTION 529.06.1: REQUIRED MAINTENANCE PROVIDER CONTRACTS

A) All owners of mechanical STS, installed on or after December 10, 2004, shall maintain a maintenance, monitoring, and service contract with a Qualified HCGHD Registered Maintenance Provider.

B) Prior to final approval of any mechanical STS installed on or after December 10, 2004, the contracted, registered, and qualified maintenance provider or owner of the STS shall submit to the Health District a signed contract agreement for the maintenance, monitoring, and service of the STS. This contract will be kept in the STS owner's file and the registered and qualified maintenance provider's file.

C) The Hamilton County General Health District shall maintain a register of all persons engaged in or intending to engage in providing maintenance, monitoring, and service of mechanical STS installed on or after December 10, 2004.

D) No person shall perform the maintenance, monitoring, or service of a mechanical sewage treatment system installed on or after December 10, 2004 unless he or she has been qualified under Paragraph (F) and (G) of this Section and is registered with the Hamilton County General Health District.

E) The application for registration, and for renewal of registration, for a qualified maintenance provider intending to provide maintenance, monitoring, and service to any mechanical STS installed on or after December 10, 2004 shall be in writing, on a form provided by the Hamilton County General Health District, and shall contain all pertinent information as required by the Board of Health. The Board of Health may establish, by resolution, an annual registration fee and such fee shall accompany each application. Registrations issued pursuant to Section 529.06.1 of this Regulation shall expire on December 31 of each year.

F) The registrant for a qualified maintenance, monitoring, and service provider shall show proof that they have received routine training from the manufacturer/distributor for all types of pretreatment devices that the registrant intends to maintain, monitor, and service. This evidence will be proof of his or her qualification and will be kept in the registrant's file.

G) The registrant for a qualified maintenance, monitoring, and service provider shall attend training from the Health District or other sources approved by the Health Commissioner for non-proprietary system components that the registrant intends to maintain, monitor, and service. Proof of this training will be required to show that the registrant is qualified and it will be kept in the registrant's file.

H) The qualified maintenance provider applicant shall post a surety bond with Hamilton County General Health District. The amount of the bond may be determined from time to time by resolution of the Board of Health and shall run in favor of the Board of Health. The bond shall be contingent upon the registrant's faithful compliance with the sewage

treatment regulations and standards included in Regulation 529, and other approved resources, as they may from time to time be amended and shall be conditioned upon the registrant's faithful performance of all work undertaken for maintenance, monitoring, and service of STS. Such bond shall be submitted to Hamilton County General Health District on or before the first day of January of each year.

I) The qualified registered maintenance provider shall submit to the Health District a signed contract agreement for the maintenance of any STS which they maintain. This contract will be kept in the STS owner's file and the qualified registered maintenance provider's file.

J) Each qualified maintenance provider agrees to provide at least an annual maintenance, monitoring, and service contract for each STS they maintain. Each STS under contract with the provider must be inspected, and service provided, if necessary, a minimum of two (2) times per calendar year or greater if recommended by the pretreatment manufacturer. A copy of the inspection reports, and inspection schedule, must be mailed to the Health District which will be kept in the permanent file for that system. Failure to do this will result in inspection of that STS by Health District staff and a reinspection fee charged to the maintenance provider.

K) The qualified maintenance provider shall install loaner parts immediately when an existing mechanical component must be removed for repair or replacement if a permanent part is not available. All repairs or replacements shall be done in a timely manner.

L) Both the contracted, registered, and qualified maintenance provider and the owner of the mechanical STS installed on of after December 10, 2004, shall notify the Health District in writing when the maintenance contract is cancelled, expired, or not renewed. At which time the system owner must have contracted with another registered and qualified maintenance provider and follow all applicable requirements of this Regulation.

M) In the event that the owner of a mechanical STS installed on or after December 10, 2004, has not filed a valid contract with a registered and qualified maintenance provider within 30 days of cancellation or expiration of a previously valid contract, the Health District shall suspend or revoke the owners provisional operation permit, inspect the STS for proper operation, and hold the owner in violation of Regulation 529. All applicable fees shall apply.

N) Any mechanical STS owner whose system was installed on or after December 10, 2004, who wishes to monitor, maintain, and service their own STS may do so by meeting all of the above requirements, but will be exempt from the yearly bonding requirements and yearly registration fee.

O) Any mechanical STS owner, whose system was installed on or after December 10, 2004, and who is the registered and qualified maintenance provider of that system, will have their system inspected for a provisional Operation Permit at least annually by the Health

District staff. If the system is found to be out of compliance with these Regulations, more than two times in a row, then the owner may be placed on probation for one year and be required to appear before the Health Commissioner for a preliminary hearing. If the owner does not demonstrate understanding or proper monitoring, maintenance, or service for their STS, then the owner may be required to appear before the Board of Health for a hearing and their registration could be revoked.

SECTION 529.07: REGISTRATION OF INSTALLER AND REPAIRERS OF STS

A) No person shall perform the services of an installer or repairer of STS unless he or she is registered with the Hamilton County General Health District.

B) The application for registration and for renewal of registration shall be in writing on a form provided by the Hamilton County General Health District and shall contain all pertinent information as required by the Board of Health. The Board of Health may establish by resolution an annual registration fee and such fee shall accompany each application.

C) The installer or repairer shall demonstrate their understanding of the installation and operation of STS by completing the necessary forms and applications.

D) For those STS utilizing mechanical components (motors, pumps, switches, etc.), the repairer shall install loaner units immediately, when an existing mechanical component must be removed for repair or replacement. All repairs or replacements shall be done in a timely manner.

E) No installer or repairer registered under this Section shall perform monitoring, maintenance, or service on any mechanical STS installed on of after December 10, 2004, without meeting the requirements of Section 529.06.1 of this Regulation.

F) The installer or repairer applicant shall post a surety bond with the Hamilton County General Health District. The amount of the bond may be determined from time to time by resolution of the Board of Health and shall run in favor of the Board of Health. The bond shall be contingent upon the registrant's faithful compliance with the sewage treatment regulations and standards included in Regulation 529, and other approved requirements, as they may from time to time be amended and shall be conditioned upon the registrants' faithful performance of all work undertaken for installation of STS. Such bond shall be submitted to the Hamilton County General Health District on or before the first day of January of each year.

G) Each registration issued pursuant to Section 529.07 of this Regulation shall expire on December 31 of each year.

H) Every registrant shall maintain and submit to the Hamilton County General Health District such data and records as may be required for determining compliance with the requirements of Regulation 529.

I) Installers may be limited to having a maximum number of "open" permits at one time. Once a job has been started, it must be completed before it will be dropped off of an installer's list. If the permit expires within this time period, the installer must repay the current installation permit fee. If the installer is not finishing the job, then another registered installer must have obtained the installation permit for that job before it will be dropped off of their list. Installers may not obtain any new installation permits if they

have any previously permitted jobs that remain “open” longer than two years, if it was within the installer’s means to finish.

J) An installer or repairer will be charged by paying two times (2x) the current installation permit fee for:

1) Installing, altering or working on an STS without a valid Permit to Install or Alteration Permit.

2) Installing or working on an STS without a valid registration.

K) Whenever the Hamilton County General Health District finds that a registrant has violated any provision of Regulation 529, specifications found in other approved manuals, has failed to install, alter, or repair an STS according to the specifications of an approved sanitation site plan, application, permit, or work order, or has falsified any information or documentation given to the Health District, it may stop all work of the registrant and submit the matter to the Board of Health to determine whether the registration should be suspended or revoked. No registrant shall perform the services of an installer or repairer during the suspension or revocation of his or her registration except such services as may be permitted by the Hamilton County General Health District. Prior to the suspension period or revocation of any registration, the Board of Health shall give written notice that such action is being considered and shall provide for a hearing at which time the registrant shall have an opportunity to show cause why such action should not be taken. The registrant may appeal the suspension or revocation as provided by law and as provided herein.

L) If, at the end of the suspension period, the registrant fails to complete the remedial action outlined in the suspension notice, the Board of Health may extend the suspension period or revoke the registration. Prior to the extension of the suspension period or revocation of any registration, the Board of Health shall give written notice that such action is being considered and shall provide for a hearing at which time the registrant shall have an opportunity to show cause why such action should not be taken.

M) Any registrant who has had his or her registration revoked shall not be issued another registration without the specific approval of the Board of Health.

N) Upon obtaining an installation or alteration permit on a property that an existing STS is being altered or replaced, the installer shall conduct due diligence to locate and properly abandon those STS components no longer in use, properly connect all wastewater sources to the STS, properly rerouting all surface water drainage away from the STS and properly remove all non-wastewater flows from entering the STS.

O) Upon obtaining an installation or alteration permit, the installer shall be responsible for the entire STS installation including but not limited to compliance with electrical requirements, finished grading, and connection of the STS to the plumbing system.

SECTION 529.08: REGISTRATION OF SEWAGE TANK CLEANERS

A) No person shall perform the services of a sewage tank cleaner unless he or she holds a valid registration issued by the Board of Health.

B) The application for registration and for renewal of registration shall be in writing on a form provided by the Hamilton County General Health District and shall contain all pertinent information as required by the Board of Health. The Board of Health may establish by resolution a registration fee and such fee shall accompany the application.

C) The applicant shall demonstrate the following before being registered:

1) That each vehicle tank is leak proof, is in good condition and has a minimum capacity of 1,000 gallons, or a minimum of 500 gallons for portable toilet cleaners.

2) That the pumping equipment is capable of removing the accumulated sludge from a sewage tank.

3) That the applicant has access to acceptable locations for the disposal of transported sewage and has made acceptable arrangements for the safe handling of the sewage during the emptying of the vehicle tank. Additionally, the applicant shall keep track of all collected sewage loads and provide proof of disposal records upon request.

4) That the company name or logo in characters at least three inches high be displayed on both sides of each truck cab or vehicle tank.

5) That the applicant has the ability to completely clean out all septic tank compartments and filters.

D) The sewage tank cleaner applicant shall post a surety bond with the Hamilton County General Health District. The amount of the bond may be determined from time to time by resolution of the Board of Health and shall run in favor of the Board of Health. Acceptance of the bond shall be contingent upon the registrant's faithful compliance with the sewage treatment regulations and standards included in Regulation 529, and any other approved manuals as they may from time to time be amended and shall be conditioned upon the registrant's faithful performance of all work undertaken for the cleaning of STS. Such bond shall be submitted to the Hamilton County General Health District.

E) Registrations issued pursuant to Section 529.08 of this Regulation shall expire on December 31 of each year.

F) Each and every registrant shall maintain and submit to the Board of Health such data and records as may be required for determining compliance with the requirements of Regulation 529.

G) Whenever the Hamilton County General Health District finds that a registrant has violated any provision of Regulation 529 or has failed to meet the terms stated on the registration, it may stop all work of the registrant and submit the matter to the Board of Health to determine whether the registration should be suspended or revoked. No registrant shall perform the services of a sewage tank cleaner during the suspension or revocation of such registration. Prior to the suspension period or revocation of any registration, the Board of Health shall give written notice that such action is being considered and shall provide for a hearing at which time the registrant may have an opportunity to show cause why such action should not be taken. The registrant may appeal the suspension or revocation as provided by law and as provided herein.

H) If at the end of the suspension period, the registrant fails to complete the remedial action outlined in the suspension notice, the Board of Health may extend the suspension or revoke the registration. Prior to the extension of the suspension period or revocation of any registration, the Board of Health shall give written notice that such action is being considered and shall provide for a hearing at which time the registrant may have an opportunity to show cause why such action should not be taken.

I) Any registrant who has had his or her registration revoked shall not be issued another registration without the specific approval of the Board of Health.

J) No sewage tank cleaner registered under this Section shall perform monitoring, maintenance, or service on any mechanical STS installed after the effective date of this Regulation, without meeting the requirements of Section 529.06.1 of this Regulation.

SECTION 529.09: SEPTIC TANKS

A) Except as provided in Paragraph (C) and (D) of Section 529.10 of this Regulation, a complete gravity STS shall have a septic tank(s) with the minimum effective capacity of:

1) One, two, or three family dwelling (tank volume shall be increased when special use fixtures are present or when flows are expected to be above the peak flow rate of 120 gallons per day per bedroom)

a) One, two, or three bedrooms - 1500 gallons in one tank with two compartments

b) Four to five bedrooms - 2000 gallons in one tank with two compartments

c) Six or more bedrooms – one thousand gallons plus 250 gallons for each bedroom in two tanks or compartments

2) Small Flow Onsite Sewage Treatment Systems

a) 1500 gallons minimum in two tanks or compartments with at least two and a half times the peak daily design flow.

B) In systems using two septic tanks, the tanks shall be connected in series and all sewage shall initially enter the first tank.

C) In systems using two septic tanks in series, the first tank shall have a capacity at least equal to the second tank but shall not be more than twice as great as the second.

D) In systems using a two-compartment septic tank, the first compartment shall have a capacity approximately equal to two times the capacity of the second compartment.

E) The invert level of the inlet to the septic tank shall be no less than two inches above the liquid level of the tank.

F) All septic tanks installed shall be equipped with a vented inlet baffle to direct the incoming sewage downward. The baffle shall penetrate at least six inches below the liquid level, but the penetration shall not be greater than that made by the outlet device or where an outlet device would usually be placed if the tank did not have a pumped discharge.

G) Except as provided in Paragraph (D) of Section 529.10 and Paragraph (H) of Section 529.13 of this Regulation, the outlet of all septic tanks shall be fitted with a vented tee, vented ell, or baffle which shall extend not less than six inches above and not less than eighteen inches below the liquid level of the tank, and shall include an effluent filter device consistent with the approved specifications found in the Hamilton County Installer's Manual.

H) In septic tanks which are divided into two compartments, the outlet from the first compartment to the second shall be fitted as described in Paragraph (G) of Section 529.09 of this Regulation, with the exception of the effluent filter requirement. This effluent filter is required if one two compartment septic tank is being used as provided in Paragraph (D)(2) of Section 529.10 of this Regulation. Alternately, in a completely gravity HSTS or a septic tank being used as provided in Paragraph (D)(1) of Section 529.10 of this Regulation, the wall separating the two compartments shall have a pass through port or ports 18 to 20 inches below the liquid level and shall provide a cross-sectional area equal to at least twice the area of the inlet.

I) The liquid drawing depth of new septic tanks shall be at least four (4) feet to five (5) foot maximum.

J) The distance from the flow line to the top of new septic tanks shall be at least nine (9) inches.

K) Separate risers will be required on the inlet and outlet access ports. The riser shall be sealed watertight to the top of the septic tank by methods found in an approved guidance manual. Each such access opening shall have a minimum diameter or shortest sidewall dimension of eighteen (18) inches, on gravity systems, and twenty-four (24) inches on pumped systems. Risers shall be fitted with a secured watertight cover and shall be extended to grade or ground level and be installed in accordance with any approved guidance manual.

L) All new septic tanks and devices found in Sections 529.02, 529.10 and 529.13 of this Regulation shall be constructed and designed to meet engineering and watertight standards deemed acceptable to the Ohio Department of Health and the Hamilton County General Health District. These devices shall be subjected to the in field watertight testing procedures found in the approved Installer's Manual.

M) All new septic tanks shall be set level on a compacted aggregate base consistent with that found in the approved guidance manual. The remaining excavation around the tank shall be backfilled with compacted aggregate consistent with that found in the approved guidance manual. This backfill must be placed to at least an elevation equal to the inverts of the inlet and outlet sewer pipe.

N) No septic tank shall be installed or located within the minimum distances set forth in Table #1 of Regulation 529.

O) The owner shall have a septic tank cleaned by a registered sewage tank cleaner whenever the total scum and sludge depth is greater than one-half the depth from the flow line to the floor of the septic tank, or less than 8 inches from any flow through port(s), whichever is greater.

P) When discontinuing use of a septic tank, the owner must obtain a sewage treatment system abandonment permit, pay the permit fee, complete the abandonment procedures set forth in Table #2 of Regulation 529, and call for inspection.

Q) Joints, seals, and pipe connections shall be watertight, and shall comply with the approved Installer's Manual.

R) Septic and sewage tanks shall be subject to the in field watertight testing procedures found in the approved Installer's Manual.

S) All septic tanks shall be installed in accordance with the approved Installer's Manual.

T) Any person wishing to sell or distribute a device used as a sewage tank within the jurisdiction of the Hamilton County General Health District shall submit to the Hamilton County General Health District an application, in writing, on a form provided by the District, all pertinent information as requested. The Board of Health may establish a fee for this registration which shall accompany the application. Additionally, the following shall be satisfactorily completed.

1) Documentation that the manufacturer has submitted to, and gained approval from, the Ohio Department of Health for the device to be used in Ohio.

2) Documentation that the device can be used in the situation in which it will be placed without voiding any device warranties.

3) Professional engineer stamped calculations and signed summary statement showing the structural integrity, and buoyancy of the device. These calculations shall justify the minimum and maximum burial depths under the assumption that groundwater will be to the surface of the ground and the tank will be empty.

4) A satisfactory explanation, in writing, on how they intend to meet the requirements of Regulation 529 and the requirements of the Installer's Manual.

5) Documentation of proper installation procedures in a format consistent with the Hamilton County Installer's Manual.

6) Documentation of all dimensions and volumes of the device.

7) Accurate drawings of the device in a format consistent with the Hamilton County Installer's Manual.

SECTION 529.10: DOSING TANKS, DOSING SUMPS, PUMPS, SIPHONS, AND CONTROLS

A) All dosing tanks, and dosing sumps shall be constructed and designed to meet engineering and watertight standards deemed acceptable to the Hamilton County General Health District. These devices shall be subjected to in field watertight testing procedures found in the approved Installer's Manual.

B) Dosing tanks and dosing sumps shall be easily accessible and shall contain risers to grade. All risers shall be watertight. Riser connections shall be sealed watertight to the top of the tank/sump by methods found in an approved Installer's Manual. Each riser access opening shall have a minimum diameter or shortest sidewall dimension of twenty-four (24) inches. Risers shall be fitted with a secured watertight cover and shall be extended to grade or ground level and be installed in accordance with any approved Installer's Manual.

C) Dosing tanks, dosing septic tanks, septic tanks used with dosing tanks, and dosing sumps shall be sized according to the approved Installer's Manual.

D) A septic tank's second compartment or a second sewage tank in series may be used for dosing if all conditions under Paragraph (C) of this Section are met, and

1) A filtered step system, or screened vault filter is used meeting the requirements found in the approved Installer's Manual; or

2) An effluent filter is used which meets Paragraphs (G) and (H) of Section 529.09 of this Regulation, and is fitted with an alarm to alert the occupant of servicing needs.

E) Joints, seals, and pipe connections shall be watertight, and shall comply with the approved Installer's Manual.

F) Any person wishing to sell or distribute a device used as a dosing tank within the jurisdiction of the Hamilton County General Health District shall submit to the Hamilton County General Health District an application, in writing, on a form provided by the District, all pertinent information as requested. The Board of Health may establish a fee for this registration which shall accompany the application. Additionally, the requirements of Paragraph (T) of Section 529.09 of this Regulation shall be satisfactorily completed.

G) No dosing tank/basin shall be installed or located within the minimum distances set forth in Table #1 of Regulation 529.

H) When discontinuing use of a dosing tank/basin, the owner must obtain a sewage treatment system abandonment permit, pay any applicable permit fees, complete the abandonment procedures set forth in Table #2 of Regulation 529, and call for inspection.

I) Pumps shall meet the following specifications:

1) A pump shall be rated for effluent service by the manufacturer and be a UL or CSA listed product.

2) A pump shall meet the minimum design flow rate and total dynamic head requirements specified in the STS design.

3) A quick disconnect shall be easily accessible in the pump discharge piping, with adequate lift attachments provided for removal and replacement of the pump and switch assembly without having to either enter the dosing tank or pump the tank to lower the liquid level.

4) Pumps shall meet any additional requirements found in the approved Installer's Manual.

J) A dosing siphon may only be used if the STS design requirements, including the minimum design flow rate, minimum operating head, and minimum dose capacity, can be met and maintained. Additionally, operating heads must be met and maintained before fifty percent (50%) of the required dose has completed.

K) Switches, controls, alarms, and electrical components shall be installed in a manner easily accessible for routine monitoring and maintenance and shall comply with the following:

1) Switches and controls shall accommodate the minimum and maximum dose capacities of the distribution network design.

2) Controls shall be field-tested to assure compliance with the STS design specifications. Event counters, elapsed time meters, and other applicable data collection devices shall be included in those STS designs having any critical control functions.

3) Control panels and alarms shall be mounted in an easily accessible exterior location, provide manual test features for all electrical components, and include written instructions related to standard operation and alarm events.

4) All critical control functions shall have both audible and visual alarms. When failure or malfunction is present, the alarm shall be activated and the control panel and system design shall prevent the passage of effluent to the next system component. Alarms, test features, and controls shall be on a separate circuit from the dedicated circuit for the pump, motor, or other electrical device in the STS.

5) Controls shall never respond to an alarm by dosing on demand.

6) All electrical wiring shall meet the National Electric Code and other requirements found in the approved Installer's Manual. Watertight connections shall be made

in an easily accessible UL listed NEMA 4X junction boxes. All controls shall be outdoors in an easily accessible NEMA 4, or 4X enclosures for outdoor use.

7) Mechanical STS installed on or after December 10, 2004, shall contain a control panel that is equipped with telemetry which will alert the contracted registered maintenance provider and the Health District by phone, or internet, 24 hours a day and 7 days a week, when there is a component failure, malfunction, or other alarm condition in any part of the treatment system. There shall be, as a condition of the maintenance agreement, a maximum of 24 hours between the time of an alert and the arrival of the maintenance provider at the site. All telemetry units shall comply with the following:

a) The units must share an existing telephone line within the dwelling, and

b) The units must call a computer system or operator which will, by use of software or other means, keep an ongoing record of all alerts, alarms, and status updates of each system, and

c) The units must call into the computer system or operator at least once per month giving an update of system status.

L) All mechanical, or electrical components, and filters shall be considered critical control functions.

M) Controls, switches, and pumps shall be sold as packaged units designed for each particular STS design. Any person wishing to sell or distribute these packaged devices within the jurisdiction of the Hamilton County General Health District shall submit to the Hamilton County General Health District an application, in writing, on a form provided by the District, all pertinent information as requested. The Board of Health may establish a fee for this registration which shall accompany the application. The following information shall be submitted for review to the District when making a determination under this Paragraph:

1) Documentation that the device can be used in the situation in which it will be placed without voiding any device warranties.

2) When applicable, calculations showing that the device meets design needs.

3) A satisfactory explanation, in writing, on how the device will meet the requirements of Regulation 529 and the requirements of the approved Installer's Manual.

4) Documentation of proper installation procedures in a format consistent with the Hamilton County Installer's Manual. Documentation of all dimensions of the devices.

5) Documentation of all dimensions of the devices.

6) Accurate drawings of the device in a format consistent with the Hamilton County Installer's Manual.

7) Standard design specifications, product specifications, operation and maintenance requirements, and any other materials necessary for a proper determination.

8) Additionally, the distributor shall be knowledgeable and have advanced training with STS and shall comply with the following:

   a) Either register themselves as, or have a subcontractor register as, the qualified maintenance, monitoring, and service provider for each STS which contains their product. This registration shall be for at least the first year of maintenance, monitoring, and service and shall at minimum include a system checkout inspection to verify proper STS startup operation, a ninety (90) day to one hundred and twenty (120) day inspection, and a one (1) year inspection. The costs associated which such inspections shall be incorporated into the packaged unit cost

   b) Train and ensure that at minimum of two (2) qualified service providers are available at the time of Health District package approval. The distributor shall have a Health District approved plan to increase the number of qualified service providers as the number of installed units increases. Training shall include the proper operation and maintenance of all components within the STS

   c) Offer, at a minimum, one training opportunity per year for STS owners who wish to become the registered and qualified maintenance provider for their STS. The distributor shall provide a qualification letter that states that the STS owner has successfully completed the owner's education course. The distributor may charge for this training.

SECTION 529.11: PRETREATMENT EFFLUENT QUALITY DESIGN STANDARDS FOR SOIL ABSORPTION SYSTEMS

A) This section addresses secondary or higher quality effluent from pretreatment components, specifically excluding effluent generated from a septic tank or other means of primary treatment. The effluent quality standards in this Section apply to:

1) The pretreatment component approval process for soil absorption systems in Paragraph (C) of Section 529.13 of this Regulation, and

2) Pretreatment component selection in the design of those STS using soil absorption in accordance with Section 529.14 of this Regulation

B) BOD_5/TSS Effluent Quality Standard: effluent meeting the BOD_5/TSS standard shall not exceed thirty milligrams per liter (30 mg/l) for five-day biochemical oxygen demand (BOD_5) and total suspended solids (TSS), and shall apply to the STS sizing limitations addressed in Paragraph (F)(2)(b) of Section 529.14 of this Regulation.

Parameter	Standard	Application
BOD5/TSS (30 day average)	}30mg/l	Soil absorption area sizing

C) Fecal Effluent Quality Standards: the Fecal Standards listed below shall apply to STS designs, as indicated.

Parameter	Standard	Application
Fecal Coliform (30 day geometric mean)	} 10,000 col./100 ml	1 ft soil depth credit
	} 1000 col./100 ml	2 ft soil depth credit

D) Nutrient contamination related to risk factors identified in the site evaluation required under Section 529.02.1 of this Regulation, or sandy or gravelly type soil conditions found within four feet of the STS infiltrative surface specified, or risk due to proximity to local, state, or federally recognized nutrient sensitive environments shall be addressed through best management practices using pretreatment reductions in nitrogen, phosphorus, or other nutrients as applicable.

E) Total Nitrogen Effluent Quality Standards: the Total Nitrogen Standards listed below shall apply to STS designs, as indicated.

PARAMETER	STANDARD	APPLICATION
Total nitrogen (TN) (percent reduction)	m50% reduction	Distribution into sandy or gravely type soils or soils over an aquifer

SECTION 529.12: HSTS DISCHARGING SYSTEM'S DESIGN STANDARDS

A) Off-lot disposal or discharge of sewage effluent shall not be permitted, for any reason, on any lot created on or after January 12, 1998.

B) On existing buildable lots, created before January 12, 1998, off-lot discharge of sewage effluent shall not be permitted except where the installation of an on-lot soil absorption HSTS component, consistent with Section 529.14 of this Regulation, is not possible, coverage under an NPDES permit is obtained, and the following conditions are met:

1) Ground water, bedrock, slope, soil conditions, space limitations, or other limitations found within this regulation prevent the construction of an HSTS that will dissipate treated effluent in the soil on the site, and discharge will be properly treated effluent to an on-site point of discharge acceptable to the Health District within a defined drainageway.

2) A minimum distance of 50 feet is maintained between points of discharge.

3) When off-lot discharge of sewage effluent requires the crossing to an adjacent property to reach the point of discharge, a recorded easement or a legally established, publicly maintained drainage improvement from the dwelling lot line to the point of discharge is provided.

4) No more than one (1) property line is crossed to reach the point of discharge.

5) Written permission to discharge sewage effluent from the person or persons in control of the property or properties at the point of discharge to a distance of 100 feet downstream is provided, except in the case of repair, alteration or replacement of an existing HSTS which presently discharges outside the STS owner's parcel.

6) The pretreatment component(s) used shall be designed to produce an effluent quality consistent with this Paragraph, or any effluent quality established by the Director of the Ohio Environmental Protection Agency, whichever is more stringent. These components shall have gained approval under Paragraph (C) of Section 529.13 of this Regulation. This effluent specifically excludes effluent generated from a septic tank or other means of primary treatment. The Effluent Quality Standards for design purposes are:

a) BOD_5/TSS Effluent Quality Standard: Effluent shall not exceed ten milligrams per liter (10 mg/l) for five-day biochemical oxygen demand (BOD_5) and twelve milligrams per liter (12 mg/l) for total suspended solids (TSS)

b) Fecal Effluent Quality Standard: Effluent shall not exceed 1000 fecal coliform counts per 100 milliliter (either mpn or mf)

c) Ammonia Effluent Quality Standard: Effluent shall not exceed two milligrams per liter (2 mg/l) for ammonia (NH3)

d) Chlorine Residual Effluent Quality Standard: Effluent shall not exceed thirty eight thousandths milligrams per liter (.038 mg/l) for chlorine

e) E. Coli Effluent Quality Standard: Effluent shall not exceed 126 E. coli counts per 100 milliliter (either mpn or mf)

7) An easily accessible disinfection device found in the approved Installer's Manual is used and is located on the property. The disinfection device shall be considered a critical control function.

8) An easily accessible sampling well is located on the property after the disinfection device.

9) The treatment unit shall contain a control panel that is equipped with telemetry which will alert the contracted registered maintenance provider and the Health District by phone, or internet, 24 hours a day and 7 days a week, when there is a component failure, malfunction, or other alarm condition in any part of the treatment system. There shall be, as a condition of the maintenance agreement, a maximum of 24 hours between the time of an alert and the arrival of the maintenance provider at the site.

10) The owner agrees in writing that when test results indicate that the standards set forth in Paragraph (B) of Section 529.13 of this Regulation, are not being met or that a nuisance is being created, additional treatment devices may be required by the Hamilton County General Health District.

11) All reasonable means, as determined by the Health District, are taken to minimize the amount of effluent discharged off the lot.

SECTION 529.13: PRETREATMENT COMPONENT AND FIELD SAMPLING EFFLUENT QUALITY STANDARDS

A) The pretreatment components used in STS shall be designed to provide an effluent quality as set forth in Section 529.11 of this Regulation or, when a discharging system is used, effluent quality as set forth in Section 529.12 of this Regulation.

B) STS components shall be operated and maintained to produce an acceptable effluent quality as specified in this paragraph:

1) Existing systems, installed before December 10, 2004, shall produce an effluent quality as measured at the point of discharge from the system, any effluent standards established by the director of the Ohio Environmental Protection Agency, or with the effluent standards listed below, whichever is more stringent:

a) Biochemical Oxygen Demand (five-day) - the arithmetic mean of two or more effluent samples taken at intervals of not less than twenty-four hours shall not exceed twenty (20) milligrams per liter

b) Suspended Solids - the arithmetic mean of two or more effluent samples taken at intervals of not less than twenty-four hours shall not exceed forty (40) milligrams per liter

c) Fecal Coliform or E. Coli Bacteria - the fecal coliform counts per 100 milliliter in two or more water samples shall not exceed 5000 (either mpn or mf) or the fecal count of 5000/100 ml shall not be exceeded in 20 percent of the total water samples collected when more than five samples are taken; or water samples exceed 576 e. coli counts per 100 milliliters in two or more samples when five or fewer samples are collected, or in more than twenty percent of the samples when more than five samples are taken; and all samples shall be collected when flow is representative of steady state dry weather conditions, i.e. base flow or delayed flow, the samples shall be collected at least two hours apart, and the water samples shall be collected over a time period not to exceed thirty days

2) Discharging systems installed on or after December 10, 2004, or any surfacing effluent from a soil absorption system installed on or after December 10, 2004 and under Section 529.14 of this Regulation, shall produce an effluent quality as measured at the point of discharge, any effluent standards established by the Director of the Ohio Environmental Protection Agency, or with the effluent standards listed below, whichever is more stringent:

a) Biochemical Oxygen Demand (five-day) - the arithmetic mean of two or more effluent samples taken at intervals of not less than twenty-four hours shall not exceed ten (10) milligrams per liter

b) Total Suspended Solids - the arithmetic mean of two or more effluent samples taken at intervals of not less than twenty-four hours shall not exceed twelve (12) milligrams per liter

c) Fecal Coliform Bacteria - the fecal coliform counts per 100 milliliter in two or more water samples shall not exceed 1000 (either mpn or mf) or the fecal count of 1000/100 ml shall not be exceeded in 20 percent of the total effluent samples collected when more than five samples are taken; and all effluent samples shall be collected over a time period not to exceed thirty days.

d) Ammonia ($-NH_3$) – the arithmetic mean of two or more effluent samples taken at intervals of not less than twenty-four hours shall not exceed one (1) milligram per liter during the months of March to November, or three (3) milligrams per liter during the months of December to February

e) Chlorine – the arithmetic mean of two or more effluent samples taken at intervals of not less than twenty-four hours shall not exceed thirty-eight thousandths milligrams per liter (.038 mg/l) for chlorine

3) Pretreatment units which are used in an STS designed for complete soil absorption as described in Section 529.14 of this Regulation, and installed on or after December 10, 2004, shall produce an effluent quality, as measured at the sampling point before discharging into the soil, the standards listed below:

a) Biochemical Oxygen Demand (five-day) - the arithmetic mean of two or more effluent samples taken at intervals of not less than twenty-four hours shall not exceed thirty (30) milligrams per liter

b) Total Suspended Solids - the arithmetic mean of two or more effluent samples taken at intervals of not less than twenty-four hours shall not exceed thirty (30) milligrams per liter

c) Fecal Coliform Bacteria

i) When the soil or other conditions at the site require the use of a pretreatment system receiving a two (2) foot soil depth credit consistent with Paragraph (D)(3) of Section 529.14 of this Regulation, the fecal coliform counts per 100 milliliters in two or more effluent samples shall not exceed 1000 (either mpn or mf) or the fecal count of 1000/100 ml shall not be exceeded in 20 percent of the total effluent samples collected when more than five samples are taken; and all effluent samples shall be collected over a time period not to exceed thirty days.

ii) When the soil or other conditions at the site require the use of a pretreatment system receiving a one (1) foot soil depth credit

consistent with Paragraph (D)(3) of Section 529.14 of this Regulation, the fecal coliform counts per 100 milliliters in two or more effluent samples shall not exceed 10,000 (either mpn or mf) or the fecal count of 10,000/100 ml shall not be exceeded in 20 percent of the total effluent samples collected when more than five samples are taken; and all effluent samples shall be collected over a time period not to exceed thirty days.

d) Nitrate (NO_3) – when the soil, or other condition, at the site requires the use of a pretreatment system that reduces total nitrogen prior to soil absorption consistent with Paragraph (B) of Section 529.14, (D) or (E) of Section 529.11 of this Regulation, the arithmetic mean of two or more effluent samples taken at intervals of not less than twenty-four hours shall not exceed ten (10) milligrams per liter.

C) No pretreatment component shall be installed in an STS unless approved by the Hamilton County General Health District in accordance with this Paragraph. The applicant shall submit to the Hamilton County General Health District an application, in writing, on a form provided by the District, all pertinent information as requested. The Board of Health may establish a fee for this approval review process, which shall accompany the application. The District shall review pretreatment components proposed for use in an STS and approve the pretreatment components that the District determines to demonstrate compliance with this Section and the Effluent Quality Standards in Section 529.11 or 529.12 of this Regulation, as they apply. The following information shall be submitted for review to the District when making a determination under this Paragraph:

1) Documentation that the manufacturer has submitted to, and gained approval from, the Ohio Department of Health for the device to be used in Ohio.

2) Documentation that the device can be used in the situation in which it will be placed without voiding any device warranties.

3) When applicable, professional engineer stamped calculations and signed summary statement showing the structural integrity, and buoyancy of the device or components. These calculations will justify the minimum and maximum burial depths under the assumption that groundwater will be to the surface of the ground and the device/component will be empty.

4) A satisfactory explanation, in writing, on how the device will meet the requirements of Regulation 529 and the requirements of the approved Installer's Manual.

5) Documentation of proper installation procedures in a format consistent with the Hamilton County Installer's Manual.

6) Documentation of all dimensions, and if applicable, volumes of the device.

7) Accurate drawings of the device in a format consistent with the Hamilton County Installer's Manual.

8) Standard design specifications, product specifications, operation and maintenance requirements, and any other materials necessary for a proper determination.

9) For proprietary units as defined in Section 529.01 of this Regulation**,** verified effluent quality data must be supplied by the manufacturer of the pretreatment component, using testing protocols approved by the District. This data must show that the unit can meet the Effluent Quality Standards stated in Section 529.11 or, when being used for a discharging system, Section 529.12 of this Regulation, seventy-five (75) percent of the time.

10) For non-proprietary units as defined in Section 529.01 of this Regulation, a generally accepted standard design reference applicable to the type of pretreatment component proposed for use, may be used to show that the unit can meet The Effluent Quality Standards stated in Section 529.11 or, when being used for a discharging system, Section 529.12 of this Regulation, seventy-five (75) percent of the time.

11) Additionally, the applicant/distributor shall be knowledgeable and have advanced training with STS and shall comply with the following:

a) Either register themselves as, or have a subcontractor register as, the qualified maintenance, monitoring, and service provider for each STS, which contains their pretreatment device. This registration shall be for at least the first year of maintenance, monitoring, and service and shall at minimum include a system checkout inspection to verify proper STS startup operation, a ninety- (90) day to one hundred and twenty (120) day inspection, and a one (1) year inspection. The costs associated which such inspections shall be incorporated into the pretreatment unit cost

b) Train and ensure that at minimum of two (2) qualified service providers are available at the time of Health District pretreatment unit approval. The distributor shall have a Health District approved plan to increase the number of qualified service providers as the number of installed units increases. Training shall include the proper operation and maintenance of all components within the STS

c) Offer, at a minimum, one training opportunity per year for STS owners who wish to become the registered and qualified maintenance provider for their STS. The distributor shall provide a qualification letter that states that the STS owner has successfully completed the owner's education course. The distributor may charge for this training

D) The District will maintain a list of pretreatment component types that have been approved under Paragraph (C) of this Section. A pretreatment component type on the list shall be evidence of approval under Paragraph (C) of this Section for a maximum period of five years, and may be renewed at the end of the five year period or reevaluated at any time during the five year period. Pretreatment components which went through approval by the district after January 1, 2003, but prior to December 10, 2004, shall continue to be approved until reevaluated.

E) Pretreatment components shall be designed to have effluent sampling capability at the endpoint of the pretreatment process prior to dispersal.

F) Covers for pretreatment components shall be secured and be easily accessible for monitoring and maintenance.

G) Pretreatment components shall be constructed so that any subsurface containments are watertight. These components may be required to comply with Paragraph (R) of Section 529.09 of this Regulation.

H) Pretreatment components shall assure that their design, or the STS design which includes the pretreatment component, prevents passage of solids greater than one-sixteenth of an inch in size.

I) The pretreatment component must be time dosed, with minimized discrete dose volumes. Dosing intervals shall attenuate peak flows and maximize treatment. Dosing shall only allow for the average daily design flow rate to be distributed proportionally over a twenty-four hour period without the control panel recording the peak flow event. The exception to this rule is if the soil absorption system's distribution method complies with Paragraph (D)(2) of Section 529.14 of this Regulation.

J) All pretreatment components shall have written operation and maintenance instructions, with time lines for service, and shall be provided by the installer or manufacturer to the homeowner as a condition of final installation approval under Paragraph (J) of Section 529.05 and paragraph (C) of section 529.18 of this Regulation.

K) Installation shall be conducted in a manner consistent with approved design specifications, and the approved Installer's Manual to assure proper operation, maintenance, and monitoring of the pretreatment component.

SECTION 529.14: SOIL ABSORPTION COMPONENT

A) Except as provided in Paragraph (B) and (C) of this Section, or if being used to minimize discharge volume consistent with Paragraph (B)(11) of Section 529.12 of this Regulation, soil absorption components shall comply with the following vertical separation distances within suitable in situ soil:

1) At least three feet if the limiting condition is bedrock, the normal ground water table, a restrictive soil layer, or a rapidly permeable layer.

2) At least two feet if the limiting condition is a seasonal or perched water table, or in certain situations as described in paragraph (A) of Section 529.15 of this Regulation.

B) For rapidly permeable soils such as sands and/or gravels, which are both limiting conditions known to provide inadequate treatment within the vertical separation distances specified in paragraph (A) of this Section, the STS design shall:

1) Use a distribution method consistent with paragraph (D)(2) or (E)(3) of this Section, and

2) Use an approved pretreatment device which will reduce fecal coliform to at least one thousand colonies per one hundred milliliters (1000col. /100ml) and reduce total nitrogen to m50û concentration of the influent, and

3) Use sand depth credits consistent with Paragraph (D)(1) of this Section, if any additional limiting conditions are present which would violate any of the vertical separation distances found in Paragraph (A) of this Section or use approved sand fill if restrictive soils are being removed which overlay more permeable soils that do not contain a flow restricting soil horizon.

C) This Paragraph shall allow for a reduction in the vertical separation distances specified in Paragraphs (A)(1) and (A)(2) of this Section through the use of soil depth credits as specified in Paragraph (D) of this Section, provided:

1) A vertical separation distance of at least one foot is maintained within suitable in situ soil, or

2) If the limiting condition is a seasonal or perched water table, a vertical separation distance of at least one foot is maintained within elevated sand fill and suitable in situ soil, or

3) If the limiting condition is a seasonal or perched water table and the effluent from the pretreatment unit used in the design does not exceed the fecal standard of one thousand (1000) colonies per one hundred milliliters, then elevated sand fill may be reduced to a minimum of four inches of sand.

D) Subject to the requirements of Paragraph (C) and (E) of this Section, soil depth credits shall be available as follows to be used and combined as necessary to satisfy the vertical separation distance:

1) A one-to-one (1:1) equivalency soil depth credit, up to a maximum of two feet, shall apply to soil absorption components that elevate the infiltrative surface of the distribution system above the ground surface to achieve vertical separation distance with sand fill and associated effluent type and pressurized distribution specified in paragraph (E)(1), (E)(2), or (E)(3) of this section. Sand fill material in an elevated soil absorption component shall comply with applicable design specifications under Paragraph (G) of this Section including sand media, sand soil interface, and sand placement requirements.

2) A one foot soil depth credit shall apply when soil absorption components utilize drip distribution in compliance with applicable design specifications under Paragraph (G) of this Section, provided the STS design complies with manufacturer's specifications and the drip tubing is time dosed, has pressure compensating emitters, and is maintained through an automated scouring flush of at least two feet per second.

3) Soil depth credits as specified for effluent meeting the Fecal Standards in Paragraph (C) of Section 529.11 of this Regulation shall apply to soil absorption components that are preceded by pretreatment components in compliance with Section 529.13 of this Regulation.

E) The following requirements for effluent type and distribution combinations shall apply to the soil absorption component, as indicated:

1) Septic tank effluent shall only be distributed into suitable in situ soil when the soil infiltrative surface is at least eight inches below the surface of the original grade elevation and the vertical separation distance specified in paragraph (A) can be maintained from a limiting condition including certain situations as described in Paragraph (A) of Section 529.15 of this Regulation.

a) An exception to the requirements of Paragraph (E)(1) of this Section shall be as follows:

i) Septic tank effluent can be distributed to the soil if a distribution method consistent with paragraph (E)(3) of this section is used, no less than twelve inches of elevated sand is used, consistent with the requirements of Paragraph (D)(1) of this Section, and additional sand is provided as necessary to satisfy the vertical separation requirement, and a vertical separation distance of one foot is maintained with suitable in situ soil, or, when the limiting condition is a seasonal/perched water table, with suitable in situ soil and elevated sand fill; or

ii) Septic tank effluent can be distributed to the soil if a distribution method consistent with Paragraph (D)(2) of this Section is used, plus additional sand is provided, consistent with paragraph (D)(1) of this section, as necessary to satisfy the vertical separation requirement and a vertical separation distance of one foot is maintained within suitable in situ soil or, when the limiting condition is a seasonal/perched water table, with suitable in situ soil and elevated sand fill.

2) Except as provided in Paragraph (E)(4) of this Section, designs with pretreatment component effluent quality meeting the BOD_5/TSS and applicable Fecal Standards in Section 529.11 of this Regulation, shall utilize pressurized distribution that provides an instantaneous loading rate which:

a) Consistent with Paragraph (N)(1) and (N)(5)(a) of Section 529.02 of this Regulation, only allows for the average daily design flow rate to be distributed proportionally over a twenty-four hour period without the control panel recording the peak flow event.

b) Each dose volume is no greater than 0.28 gallons per orifice per dose in a soil absorption component that is constructed above original grade, or each dose volume is no greater than 0.42 gallons per orifice per dose for a soil absorption component that is constructed below original grade.

c) When the soil absorption component is constructed below original grade, flow is distributed to infiltrative surface areas of no greater than six square feet per orifice or point of dispersal.

3) Designs used consistent with Paragraph (B)(1) or (E)(1)(a)(i) of this Section, shall utilize equalized distribution that provides timed dosing and minimized dose volumes. Dosing intervals shall attenuate peak flows and allow for re-aeration of the soil absorption area between doses. The design of the distribution network shall provide an instantaneous loading rate as follows:

a) Consistent with Paragraph (N)(1) and (N)(5)(a) of Section 529.02 of this Regulation, only allows for the average daily design flow rate to be distributed proportionally over a twenty-four hour period without the control panel recording the peak flow event

b) Each dose volume is less than 0.42 gallons per orifice per dose

c) Flow is distributed to infiltrative surface areas of no greater than six square feet per orifice or point of dispersal. This infiltrative surface shall be at minimum 4 feet wide when sand fill is used.

4) Designs with pretreatment component effluent quality meeting the BOD_5/TSS and applicable Fecal Standards in Section 529.11 of this Regulation may use gravity distribution in those cases where a one foot vertical separation distance to any limiting condition can be maintained within suitable in situ soil and the infiltrative surface is at least eight inches below the original grade.

F) The soil absorption component area shall be of adequate size to disperse the effluent and prevent ponding on the surface of the ground. When sizing the soil absorption area the following requirements shall be met:

1) Soil loading rates shall be based on effluent quality and on soil structure, texture, and consistency and shall be selected from Table #3

2) The selection of soil loading rates based on effluent quality shall be limited to one of the following:

a) A rate for septic tank effluent, or

b) A rate for effluent meeting the BOD_5/TSS Standard under Paragraph (B) of Section 529.11 of this Regulation. Any further increases in soil loading rates based on reductions in BOD_5 or TSS below thirty milligrams per liter shall not be permitted for new construction but may be considered for replacement of failing HSTS that would otherwise be required to discharge due to soil or site constraints provided the owner legally agrees in writing to operate the system so that the smaller soil absorption system is not overloaded and if it does get overloaded, the necessary actions, as determined by the health district, will be completed including but not limited to adding additional STS components and/or obtaining coverage under an NPDES permit.

3) The structure, texture, and consistency of the soil at the infiltrative surface of the in situ soil shall be used to determine a soil loading rate. If a lower soil layer within four inches of the infiltrative surface would reduce treatment or dispersal, selected loading rates shall consider that lower soil layer. The soil found downslope of the absorption system shall be considered when selecting the loading rate.

4) In addition to sizing based on soil loading rates, linear loading rate (LLR) estimates shall be used to determine the required length of the infiltrative surface of the distribution system parallel to surface contours. LLR estimates shall be selected from Table #3. Up to a 20% increase to the LLR may be allowed for a replacement system which would otherwise necessitate a discharging type STS provided the STS includes a pretreatment system that receives a 2 foot soil depth credit.

5) If site and soil conditions indicate significant horizontal subsurface flow of effluent, the minimum isolation distances required under Paragraph (Q) of Section 529.02 of this Regulation shall be increased around the perimeter or downslope as an extension of the soil absorption area.

6) On all lots, the primary and replacement STS location shall take priority over the placement of other improvements. On lots created on or after January 1, 2003, the most suitable area on the property shall be used for the soil absorption system.

G) General requirements for designing a soil absorption component are as follows:

1) Effluent dispersal components shall be oriented parallel to natural surface contours and shall not be sited on slopes exceeding design limitations.

2) Observation ports that allow for monitoring of the infiltrative surface shall be provided.

3) Designs shall prevent damage to components or operational failures due to freezing temperatures.

4) Pressure distribution networks shall have a means of measuring design pressure or operating head for both initial baseline measurement and future monitoring of orifice clogging and other network operations and shall include a means of scouring or flushing distribution laterals.

5) In addition to the requirements of this Section, the design of a soil absorption component shall comply with the specifications found in any design resource approved by the District as a generally accepted standard design reference applicable to the type of soil absorption component proposed for use.

H) Installation shall be conducted in a manner consistent with design specifications and the approved Installer's Manual to assure proper operation, maintenance, and monitoring of the soil absorption component.

1) Soil moisture conditions shall be evaluated at the time of installation, and the installation shall not proceed when there is a risk of smearing or compaction as evidenced by a deformability test, commonly referred to as ribboning.

2) Testing of any pressure distribution components shall be conducted prior to approval of the installation under Paragraph (J) of Section 529.05 and paragraph (C) of section 529.18 of this Regulation. Flow rate and distal pressure or operating head shall meet design specifications and a baseline shall be recorded for future performance monitoring.

3) Baseline records and any soil absorption component operation and maintenance instructions shall be provided by the installer to both the homeowner and the

Health District as a condition of installation approval under Paragraph (J) of Section 529.05 and paragraph (C) of section 529.18 of this Regulation.

SECTION 529.15: SITE MODIFICATIONS

A) An existing drain tile, drainage system, or other artificial subsurface drainage shall be avoided whenever possible in siting an STS. If siting an STS in the area of existing artificial subsurface drainage cannot be avoided, the redoximorphic features in the soil above the depth of the drain shall be considered a limiting condition under Paragraph (A)(2) of Section 529.14 of this Regulation.

B) Site modification involving the use of fill materials shall comply with the following:

1) No fill material shall be present in the vertical separation distance below the infiltrative surface of the distribution system, other than sand fill material specified for a soil absorption component under Section 529.14 of this Regulation.

2) A settled non-compacted fill material, that has over many years developed the characteristics of soil, shall be thoroughly evaluated as to its treatment and dispersal capacity prior to any consideration for the siting of a soil absorption component.

C) STS components shall not be sited in depressions where surface water runoff cannot be properly managed through diversion. When surface water runoff will infiltrate or cause ponding on or around STS components, diversion swales shall be designed to intercept and divert surface water.

D) Any artificial subsurface drain designed to influence a the soil conditions or an STS shall comply with the following as applicable:

1) Interceptor drains shall be sited upslope of soil absorption components that result in the original grade being elevated or when evidence of groundwater is present within the vertical separation distance required in paragraph (A) of section 529.14 of this regulation or when other conditions exist which there is a need to intercept laterally moving water. The drain shall be designed such that the effluent plume moves downslope and away from the STS.

2) Gradient drains intended to enhance the subsurface flow of a normal, seasonal or perched water table shall not be used on lots created on or after January 1, 2003, to avoid maximizing the length of the soil absorption component parallel to surface contours. Gradient drains shall be used anytime a water table is present at less than 18 inches from the original ground surface and/or at anytime the infiltrative surface is closer than 18 inches to the watertable. The designer shall justify to the district any other time a gradient drain is proposed for use.

3) The isolation distance between a drain and a soil absorption component shall be adequate to prevent effluent from entering the drain based on site and soil conditions. In general an interceptor drain shall be no closer than a horizontal

distance of five feet from the closest edge of a lateral distribution network and a gradient drain shall be no closer than a horizontal distance of eight feet from the closest edge of a lateral distribution network. Both shall have a horizontal separation from any sand fill material of at least one foot of undisturbed in situ soil. Soil, site, and system hydraulics, as well as effluent quality, may be used by the STS designer to justify, to the satisfaction of the Health District, closer drain spacings to the basal area or lateral distribution network.

4) The receiving area for the drain outfall shall not pond and shall allow free flow away from the outlet. Except as provided in this Paragraph, a gravity flow outlet shall have at least six inches of freeboard. If at least six inches of freeboard is unavailable a fifteen-inch minimum diameter sampling well with secure cover shall be extended to grade to provide access and a sufficient reservoir for sampling.

5) If a gravity flow outlet cannot be achieved, the drain shall include an easily accessible pump vault of sufficient size and dose volume to maximize pump life, shall have a freeze-protected discharge line, and shall meet electrical wiring requirements under Paragraph (K)(6) of Section 529.10 of this Regulation. If a pumped drain is used in the design of a gradient drain, the pump is a critical control function requiring an alarm and shall comply with Paragraph (I) and (K) of section 529.10 of this Regulation.

SECTION 529.16: PRIVY AND HOLDING TANK

A) A privy may only be approved as an HSTS under the following conditions:

1) Plumbing connections to the privy vault are prohibited.

2) The vault is watertight and not less than one thousand gallons capacity.

3) No privy shall be installed or located within the minimum distances set forth in Table #1 of Regulation 529.

4) The superstructure is vented and minimizes entry of insects or animals.

B) Expect as provided in Paragraph (D) of this Section, a holding tank may only be permitted as a temporary HSTS given the following conditions and any additional conditions when a variance has been granted by the Board of Health:

1) Holding tanks shall be designed and installed in compliance with Section 529.02, Section 529.07, Section 529.09, and Section 529.17 of this Regulation and the outlet to the holding tank shall be permanently sealed.

2) The owner of the holding tank must submit a signed contract with a registered sewage tank cleaner to pump the holding tank at the frequency necessary to prevent a nuisance. All holding tanks will be placed in the provisional Operation Permit program with a semi-annual (two times per year) assessment date. The homeowner will be required to mail copies of the pumping receipts to the Health District monthly. As long as proof, submitted by the homeowner, shows that the holding tank is being pumped routinely, only a routine assessment will be done. If proof of pumping is not received by the Health District, an assessment will be done, and a reinspection fee will be charged. If the homeowner does not plan on moving into the home soon after the initial inspection, they will need to send a letter to the District saying that the home is not occupied, in place of the pumping receipts. When the HSTS is properly installed and approved, the provisional Operation Permit schedule will be changed to the appropriate assessment date.

3) A financial guarantee assuring that funds exist to complete the installation of the HSTS or sewer tap.

4) Installation of a visual and audible high water alarm which shall be set to activate when a least 200 gallons of capacity are left in the holding tank. The registered sewage tank cleaner shall be notified to pump the holding tank upon activation of the alarm.

5) Electrical components shall be approved by the local electrical inspection department and meet the requirements of this Regulation and the approved Installer's Manual.

6) Any approved soil absorption field must be staked, the perimeter marked with caution tape, and kept undisturbed by the time of the initial inspection and remains that way until the soil absorption system can be installed.

C) A privy or holding tank shall be pumped out by a registered sewage tank cleaner before the contents reach the top of the vault or tank.

D) A temporary holding tank permit may be granted without a variance from the Board of Health only when the following conditions exist:

1) The approved HSTS for the property cannot be installed due solely to soil wetness or related condition or for a failing HSTS when sanitary sewers are planned to serve the home.

2) The temporary holding tank will be used for less than 8 months when an HSTS cannot be installed due to soil wetness or 24 months when the HSTS is failing but sewers are planned to serve the home.

3) An Application for a Temporary Holding Tank has been submitted.

4) Any fee established by law or authority of law shall accompany the Application for a Temporary Holding Tank.

5) All other conditions under Paragraph (B) of this Section are met except paragraph (B)(3) when the holding tank is being used for a failing HSTS.

E) Only one temporary holding tank permit authorized under section (D) of this section may be granted per parcel without a variance from the Board of Health

SECTION 529.17: BUILDING SEWER

A) A building sewer shall have a minimum diameter of four inches. Building sewers shall be installed, inspected, and tested according to the approved Installer's Manual.

B) A building sewer shall be watertight and constructed of durable material conforming to ASTM D 2665 for PVC plastic pipe (type DWV) or equivalent. Pipe, fittings, and joining materials shall be chemically and physically compatible.

C) Traps shall not be installed in a building sewer.

D) A building sewer shall be aligned at a uniform grade of not less than two percent or one quarter of an inch per foot unless for a replacement system which cannot achieve such slope in order to meet existing piping grades, in which case the grade shall not be less than one percent or one eighth of an inch per foot.

E) Cleanouts shall be required in a building sewer at any turn in the pipe greater than forty-five degrees and at the point a building sewer pipe exceeds one hundred feet and at every one hundred foot interval thereafter.

F) A building sewer shall be a minimum of ten feet from any water supply source and water service line, unless the exception in Section 603.2 of the Ohio Plumbing Code in Rule 4101:3-6-03.2 of the Administrative Code applies or equivalent administrative code section should it be moved.

SECTION 529.18: INSPECTIONS

A) The Hamilton County General Health District may at any reasonable time before or during the course of installation or alteration of any item covered by Regulation 529 or any time thereafter enter upon and inspect any premises which may contain an STS, collect samples of effluent found thereon, and take any other steps which it deems necessary in order to determine the level of compliance with any provision of this Regulation. The Hamilton County General Health District may utilize the inspection reports or other data submitted or obtained from reliable sources to determine level of compliance.

B) No person shall cover any STS or part thereof unless he or she first obtains written approval for such operation from the Hamilton County General Health District.

C) No person shall place an STS into operation without first obtaining written approval for such operation from the Hamilton County General Health District.

D) Whenever additional inspections beyond those which are customary are made necessary due to incomplete or faulty work, the installer shall pay a reinspection fee for each reinspection. Such reinspection fee shall be established by resolution of the Board of Health. The registration of an installer may be suspended by the Hamilton County General Health District or revoked by the Board of Health for failure to pay reinspection fees.

E) No person shall change the use of or occupancy of a structure, or begin remodeling, rebuilding or construction of a dwelling, structure, room addition, accessory building, detached garage, deck, or swimming pool, surface water impoundment, well, geothermal heating/cooling systems, or add hardscapes included but not limited to driveways, patios, walls, or walkways, at any property served by, or required to be served by, an STS without first having filed application, submitting all requested relevant information and having received approval from the Board of Health, through its authorized representative. Upon receipt of a completed application, an inspection will be conducted by a health district representative to verify that the sewage treatment system is in compliance with the requirements of sections 529.06 and 529.06.1 of this regulation, the conditions of paragraph 529.02(T) of this Regulation have been completed, the proposed construction will not adversely impact the system's future operation and/or maintenance or the system's replacement area and the system is otherwise in compliance with the requirements of this regulation.

F) Any sewage system inspected under Paragraph (E) of this Section, for which a fee is paid consistent with this Paragraph, and for which no provisional Operating Permit has been issued, will, upon achieving approved operational status, be issued a provisional Operating Permit without imposition of the permit fee set forth in Paragraph (C) of Section 529.06.

SECTION 529.19: HEARINGS

A) Any person affected by a notice in connection with the enforcement of any provision of Regulation 529 may request and shall be granted a hearing on the matter before the Board of Health provided that such person files a written request within 30 days following receipt of a decision or action made on the matter by the Hamilton County General Health District. When a hearing is requested that would require a variance from code, the requestor shall comply with all the requirements of section 529.20 of this regulation prior to the hearing.

B) Any notice or order issued by the Board of Health shall be effective upon issuance and shall remain in effect until modified or rescinded. No person shall fail to obey any notice or order issued.

SECTION 529.20: VARIANCES

A) Any person who desires to install or operate an STS which is not or will not be in strict compliance with the standards and requirements of Chapter 3701-29 of the Ohio Administrative Code and/or the requirements in Regulation 529 may request that a variance from those standards and requirements be granted by the Board of Health. Such request for a variance shall be in writing on a form provided by the Hamilton County General Health District. The Board of Health may grant the variance provided that such variance will not defeat the spirit and general intent of the rules contained in Chapter 3701-29 of the Ohio Administrative Code and/or Regulation 529. The Board of Health may add special conditions to the granting of the variance and such conditions shall be accepted in writing before the variance is issued.

B) Any person who desires to install or operate an STS which complies with the standards and requirements of Chapter 3701-29 of the Ohio Administrative Code but which is not in compliance with the more stringent standards and requirements of Regulation 529 may request that a variance from the more stringent standards and requirements be granted by the Board of Health. The Board of Health may grant this variance provided that such variance will not defeat the spirit and general intent of Regulation 529. The Board of Health may add special conditions for the granting of the variance and such conditions shall be agreed to in writing by the requestor before the variance is issued.

C) Any and all review fees as set by the Board of Health that are associated with the variance request shall be paid by person(s) requesting the variance.

D) All variances shall be viewed and considered by the Board of Health on a case by case basis. Any variance granted to one request under one set of circumstances will not and does not set as a precedent.

E) Other innovative types of sewage treatment systems will be considered as long as they meet the appropriate household sewage treatment rules of Hamilton County and the State of Ohio.

F) A variance is valid for two years from the date of Board of Health Approval.

SECTION 529.21: EFFECT OF PARTIAL INVALIDITY

A) Each section of Regulation 529 and each part thereof is independent, and the holding of any section or part thereof to be unconstitutional, void, or not effective for any cause will not affect the validity or constitutionality of any other section or part thereof.

SECTION 529.22: PENALTY SECTION

A) This Regulation shall be enforced in accordance with Chapter 3707 and 3718 of the Ohio Revised Code. Violation of this Regulation is punishable in accordance with Sections 3707.48, 3707.99, 3718.08, 3718.09, and 3718.99 of the Ohio Revised Code. Each and every violation under this Regulation constitutes a separate offense.

Table 1

LOCATION OF VARIOUS ELEMENTS OF SEWAGE TREATMENT SYSTEMS

IN RELATION TO CERTAIN STRUCTURES AND BOUNDARIES

MINIMUM DISTANCE (IN FEET) FROM ELEMENT TO:

	LOT LINES	OCCUPIED BUILDINGS OR STRUCTURES	UNOCCUPIED BUILDINGS	WATER SUPPLY SOURCE	RIGHT-OF-WAY	SWIMMING POOL/DECKS/ HARDSCAPES		DRAINAGEWAYS/ WATER BODY IMPOUNDMENTS	GEOTHERMAL HEATING/ COOLING SYSTEM	WATER SERVICE LINE
ELEMENTS:										
SEWAGE TANK	10	10	10	50	10	10		15**/25	50	10
DISCHARGING SYSTEM COMPONENTS	10	10	10	50	10	10		15**/25	50	10
SOIL ABSORPTION SYSTEM COMPONENTS (INCLUDES DRAINS)	10 (40)*	10 (40)*	10 (40)*	50	10 (40)*	10 (40)*		15**/25	50	10
PRIVY/ LEACHING PIT	10	20	10	50	20	10		15**/25	50	10

* ANY NEW LOT CREATED ON OR AFTER DECEMBER 10, 2004 SHALL HAVE THEIR SOIL ABSORPTION SYSTEM COMPONENTS MAINTAIN A MINIMUM OF 40 FEET FROM A DOWNSLOPE PROPERTY LINE, RIGHT-OF-WAY, BUILDING, SWIMMING POOL, DECK, AND/OR DOWNSLOPE HARDSCAPE(S) IF THE SOIL HAS A RESTRICTIVE LAYER, BEDROCK, OR WATER TABLE WHICH RESTRICTS VERTICAL FLOW.

**DOES NOT INCLUDE THE PIPING AT THE DISCHARGE POINT. DOUBLE THE DISTANCE FOR DOWNSLOPE DRAINAGEWAYS.

TABLE 2

ABANDONMENT PROCEDURES FOR VARIOUS ELEMENTS OF SEWAGE TREATMENT SYSTEMS

ABANDONMENT PROCEDURES:

	STEP #1	STEP #2	STEP #3
ELEMENT:			
SEWAGE TANK	CLEAN BY REGISTERED CLEANER*	REMOVE INTERNAL COMPONENTS AND BREAK IN TOP AND ONE SIDE	FILL TO GRADE WITH INERT MATERIAL
LEACHING PIT	CLEAN BY REGISTERED CLEANER*	BREAK IN TOP AND ONE SIDE	FILL TO GRADE WITH INERT MATERIAL
PRIVY	CLEAN BY REGISTERED CLEANER*	BREAK IN TOP AND ONE SIDE	FILL TO GRADE WITH INERT MATERIAL
MODULAR FILTERS	CLEAN BY REGISTERED CLEANER*	BREAK IN TOP AND ONE SIDE	FILL TO GRADE WITH INERT MATERIAL
SOIL ABSORPTION SYSTEMS	ALLOW TO REMAIN UNDISTURBED	OR	REMOVE MATERIAL TO APPROVED SITE
BUILT "ON SITE" PACKED BED FILTERS (SAND FILTERS)	ALLOW TO REMAIN UNDISTURBED	OR	REMOVE MATERIAL TO APPROVED SITE

* PUMPING TICKETS MUST BE GIVEN TO THE HEALTH DISTRICT AS EVIDENCE OF CLEANING

TABLE 3
ESTIMATED SOIL LOADING AND LINEAR LOADING RATES.

Infiltration rates in gal/day/ft^2 for wastewater of >30mg/L or wastewater of <30mg/l and hydraulic linear loading rates in gal/day/ln.ft. for soil characteristics of texture and structure and site conditions of slope and infiltration distance. If horizon consistence is stronger than firm or any cemented class or the clay mineralogy is smectitic, the horizon is limiting regardless of other soil characteristics.

Soil Characteristics			Infiltration Loading Rate gal/day/ft^2		Hydraulic Linear Loading Rate (gal/day/ln.ft.) Slope								
					0-4%			5-9%			>10%		
Texture	Structure		>30 mg/L	<30 mg/L	Infiltration distance(inches) (Depth of soil to limitation)			Infiltration distance(inches) (Depth of soil to limitation)			Infiltration distance(inches) (Depth of soil to limitation)		
	Shape	Grade	BOD	BOD	8-12	12-24	24-48	8-12	12-24	24-48	8-12	12-24	24-48
COS,S,LCOS,LS	--	0SG	0.8	3.0	4.0	5.0	6.0	5.0	6.0	7.0	6.0	7.0	8.0
FS,VFS,LFS,LVFS	--	0SG	0.4	1.0	3.5	4.5	5.5	4.0	5.0	6.0	5.0	6.0	7.0
CSL,SL	--	0M	0.2	0.6	3.0	3.5	4.0	3.6	4.1	4.6	5.0	6.0	7.0
	PL	1	0.2	0.5	3.0	3.5	4.0	3.6	4.1	4.6	4.0	5.0	6.0
		2,3	0.0	0.0	-	-	-	-	-	-	-	-	-
	PR/BK /GR	1	0.4	0.7	3.5	4.5	5.5	4.0	5.0	6.0	5.0	6.0	7.0
		2,3	0.6	1.0	3.5	4.5	5.5	4.0	5.0	6.0	5.0	6.0	7.0
FSL,VFSL	--	0M	0.2	0.5	2.0	2.3	2.6	2.4	2.7	3.0	2.7	3.2	3.7
	PL	1,2,3	0.0	0.0	-	-	-	-	-	-	-	-	-
	PR/BK /GR	1	0.2	0.6	3.0	3.5	4.0	3.3	3.8	4.3	3.6	4.1	4.6
		2,3	0.4	0.8	3.3	3.8	4.3	3.6	4.1	4.6	3.9	4.4	4.9
L	--	0M	0.2	0.5	2.0	2.3	2.6	2.4	2.7	3.0	2.7	3.2	3.7
	PL	1,2,3	0.0	0.0	-	-	-	-	-	-	-	-	-
	PR/BK /GR	1	0.4	0.6	3.0	3.5	4.0	3.3	3.8	4.3	3.6	4.1	4.6
		2,3	0.6	0.8	3.3	3.8	4.3	3.6	4.1	4.6	3.9	4.4	4.9
SIL	--	0M	0.0	0.2	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4
	PL	1,2,3	0.0	0.0	-	-	-	-	-	-	-	-	-
	PR/BK /GR	1	0.4	0.6	2.4	2.7	3.0	2.7	3.0	3.3	3.0	3.5	4.0
		2,3	0.6	0.8	2.7	3.0	3.3	3.0	3.5	4.0	3.3	3.8	4.3
SCL,CL,SICL	--	0M	0.0	0.0	-	-	-	-	-	-	-	-	-
	PL	1,2,3	0.0	0.0	-	-	-	-	-	-	-	-	-
	PR/BK /GR	1	0.2	0.3	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4
		2,3	0.4	0.6	2.4	2.9	3.4	2.7	3.0	3.3	3.0	3.5	4.0
SC,C,SIC	--	0M	0.0	0.0	-	-	-	-	-	-	-	-	-
	PL	1,2,3	0.0	0.0	-	-	-	-	-	-	-	-	-
	PR/BK /GR	1	0.0	0.0	-	-	-	-	-	-	-	-	-
		2,3	0.2	0.3	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4

LEGEND

TEXTURE

COS - Coarse Sand, S - Sand, LCOS - Loamy Coarse Sand, LS - Loamy Sand, FS - Fine Sand, VFS - Very Fine Sand, LFS - Loamy Fine Sand, LVFS - Loamy Very Fine Sand, CSL - Coarse Sandy Loam, SL- Sandy Loam, FSL - Fine Sandy Loam, VFSL - Very Fine Sandy Loam, L - Loam, SIL - Silt Loam, SCL - Sandy Clay Loam, CL - Clay Loam, SICL - Silty Clay Loam, SC - Sandy Clay, C - Clay, SIC - Silty Clay

STRUCTURE

Shape: Massive(--), Platy(PL), Prizmatic(PR), Blocky(BK), Granular(GR)

Grade: Single Grained(0SG), Massive(0M), Weak(1), Moderate(2), Strong(3)