Modèles d'encadrement du traitement et de l'évacuation des eaux usées des résidences isolées

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PRÉFACE

Le présent projet concerne le traitement et l'évacuation des eaux usées domestiques provenant des résidences et autres bâtiments qui ne sont pas raccordés à un réseau d'égout municipal. Ce secteur est encadré par la Loi sur la qualité de l'environnement (LQE). Les résidences de 6 chambres à coucher ou moins, ainsi que les bâtiments et lieux qui produisent un débit total quotidien d'eaux usées d'origine domestique d'au plus 3 240 litres par jour, sont encadrés plus spécifiquement par le Règlement sur l'évacuation et le traitement des eaux usées des résidences isolées (RETEURI). L'article 20 de la LQE annonce une prohibition de polluer et l'article 22 couvre l'autorisation préalable des activités et travaux susceptibles de contaminer l'environnement. L'application du RETEURI relève des municipalités.

L'objectif du document présenté ici est de documenter l'encadrement actuel du traitement et de l'évacuation des eaux usées dans d'autres provinces canadiennes, États américains et pays européens pour les résidences et autres bâtiments qui ne sont pas desservis par un réseau d'égout.

Ce document est le deuxième volume de cette vaste étude comparative.

Il traite des états américains suivants : la Caroline du Nord, L'Illinois, l'Iowa, le Maine, le Michigan, le Minnesota, New York, l'Ohio, la Pennsylvanie, le Vermont, la Virginie, la Virginie Occidentale, Washington et le Wisconsin.

Le volume un porte sur certains pays européens et le volume trois sur quelques provinces canadiennes.

Sommaire

1.0 CAROLINE DU NORD

1.1 ENCADREMENT :

En Caroline du Nord, c'est le « Department of Health and Human Services, Division of Public Health, Environmental Health Section » qui est responsable du cadre législatif et administratif relatif au traitement des eaux usées des résidences isolées. L'encadrement est établi selon une Loi et un règlement. Les documents pertinents sont les suivants :

- La Loi « ARTICLE 11 OF CHAPTER 130A OF THE GENERAL STATUTES OF NORTH CAROLINA - WASTEWATER SYSTEMS », ci-après la Loi, a été mise à jour en juillet 2018.
- Le règlement « CHAPTER 18 - ENVIRONMENTAL HEALTH, SUBCHAPTER 18A – SANITATION – SECTIONS .1900 to 1971 » adopté en juillet 1982 et amendé pour la dernière fois en avril 2017, ci-après, le règlement.

L'application du règlement est sous la responsabilité des autorités locales de la santé.

> ***15A NCAC 18A .1938 RESPONSIBILITIES***
>
> ***(a) The permitting of a wastewater system shall be the responsibility of agents authorized by the State in accordance with G.S. 130A-40, 130A-50, and registered with the State of North Carolina Board of Sanitarian Examiners if required in G.S. 90A Article 4.***

> ***§ 130A-40. Appointment of local health director.***
>
> ***(a) A local board of health, after consulting with the appropriate county board or boards of commissioners, shall appoint a local health director. All persons who are appointed to the position of local health director on or after January 1, 1992, must possess minimum education and experience requirements for that position, as follows:***
>
> ***(1) A medical doctorate; or***
>
> ***(2) A masters degree in Public Health Administration, and at least one year of employment experience in health programs or health services; or***
>
> ***(3) A masters degree in a public health discipline other than public health administration, and at least three years of employment experience in health programs or health services; or***
>
> ***(4) A masters degree in public administration, and at least two years of experience in health programs or health services; or***

> ***(5) A masters degree in a field related to public health, and at least three years of experience in health programs or health services; or***
>
> ***(6) A bachelors degree in public health administration or public administration and at least three years of experience in health programs or health services.***
>
> ***§ 130A-50. Election and terms of office of sanitary district boards.***
>
> ***[…](b) The sanitary district board shall be composed of either three or five members as the county commissioners in their discretion shall determine. The members first appointed shall serve as the governing body of the sanitary district until the next regular election for municipal and special district officers as provided in G.S. 163A-1585, which occurs more than 90 days after their appointment. […]***

> ***§ 90A-52 (article 4). Practice without certificate unlawful.***
>
> ***(a) In order to safeguard life, health and the environment, it shall be unlawful for any person to practice as an environmental health specialist or an environmental health specialist intern in the State of North Carolina or use the title "registered environmental health specialist" or "registered environmental health specialist intern" unless the person shall have obtained a certificate of registration from the Board. No person shall offer services as a registered environmental health specialist or registered environmental health specialist intern or use, assume or advertise in any way any title or description tending to convey the impression that the person is a registered environmental health specialist or registered environmental health specialist intern unless the person is the holder of a current certificate of registration issued by the Board.***

Le règlement prévoit des dispositions encadrant les bâtiments générant des débits jusqu'à 3000 gallons/jour, soit 11 356 L/jour. Les projets de plus de 3000 gallons/jour (11 356 L/jour) relèvent directement de l'état.

1.2 TYPE D'EAU : Types d'eau visés par l'encadrement

Le règlement vise le traitement des eaux usées de nature domestique. Des adaptations sont toutefois également prévues pour l'encadrement d'établissement générant des eaux de procédé industriel.

> ***15A NCAC 18A .1934 SCOPE***
>
> ***The rules contained in this Section shall govern the treatment and disposal of domestic type sewage from septic tank systems, privies, incinerating toilets, mechanical toilets, composting toilets, recycling toilets, or other such systems serving single or multiple-family residences, places of business, or places of public assembly, the effluent from which is designed not to discharge to the land surface or surface waters.***

Un bâtiment générant des eaux de procédé industriel ou à charges élevées est aussi visé par le règlement. Dans un tel cas, il doit être démontré que les eaux ont subi un prétraitement qui les ramène à des charges comparables à celles d'eaux usées domestiques. La conception de systèmes dans certaines situations spécifiques doit être réalisée par un ingénieur autorisé.

> ***15A NCAC 18A .1938 RESPONSIBILITIES […]***
>
> ***(d) Any wastewater system which meets one or more of the following conditions shall be designed by a registered professional engineer if required by G.S. 89C:***
>
> ***(1) The system is designed to handle over 3,000 gallons per day, as determined in Rule .1949(a) or (b) of this Section, except where the system is limited to an individual septic tank system serving an individual dwelling unit or several individual septic tank systems, each serving an individual dwelling unit.***
>
> ***(2) The system requires pretreatment before disposal, other than by a conventional septic or other system approved under Rule .1957 or .1969 of this Section.***
>
> ***(3) The system requires use of sewage pumps prior to the septic tank or other pretreatment system, except for systems subject to the North Carolina Plumbing code or which consist of grinder pumps and associated pump basins that are approved and listed in accordance with standards adopted by the National Sanitation Foundation.***
>
> ***(4) The individual system is required by Rule .1952 of this Section to use more than one pump or siphon in a single pump tank.***
>
> ***(5) The system includes a collection sewer, prior to the septic tank or other pretreatment system, which serves two or more buildings, except for systems subject to the North Carolina Plumbing Code.***
>
> ***(6) The system includes structures which have not been pre-engineered.***

> ***(7) The system is designed for the collection, treatment and disposal of industrial process wastewater, except under the following circumstances:***
>
> ***(A) the State has determined that the wastewater generated by the proposed facility has a pollutant strength which is lower than or equal to domestic sewage, and does not require specialized pretreatment or management, or***
>
> ***(B) the State has pre-approved a predesigned pretreatment system or process and management method proposed by the facility owner which shall enable the industrial process wastewater to have a pollutant strength which is lower than or equal to domestic sewage.***
>
> ***(8) Any other system serving a business or multi-family dwelling so specified by the local health department.***

Nous sommes donc d'avis, que des bâtiments occupés par des usages tels qu'un salon de coiffure ou un atelier de mécanique sont visés par le règlement. Le concepteur devra proposer une méthode de traitement adéquate.

De plus, le règlement contient des dispositions relatives aux pièges à matière grasse visant à ramener la concentration en huiles et graisses en deçà des seuils d'eau domestique. Il n'y a pas d'autre précision au sujet, par exemple, des adoucisseurs d'eau.

> ***15A NCAC 18A .1955 DESIGN INSTALLATION CRITERIA FOR CONVENTIONAL SEWAGE SYSTEMS […]***
>
> ***(k) Grease traps or grease interceptors shall be required at food service facilities, meat markets, and other places of business where the accumulation of grease can cause premature failure of a soil absorption system. The following design criteria shall be met:***
>
> ***(1) The grease trap shall be plumbed to receive all wastes associated with food handling and no toilet wastes;***
>
> ***(2) The grease trap liquid capacity shall be sufficient to provide for at least five gallons of storage per meal served per day, or at least two-thirds of the required septic tank liquid capacity, or a capacity as determined in accordance with the following: […]***

1.3 DENSITÉ MAXIMALE : Densité maximale des installations septiques

Le règlement est muet au sujet de la densité des installations septiques ou de leur effet cumulatif sur l'environnement.

1.4 REJETS : Rejets en surface

Les modalités de rejets de surface ne sont pas abordées puisqu'ils sont interdits selon le règlement.

> ***15A NCAC 18A .1934 SCOPE***
>
> ***The rules contained in this Section shall govern the treatment and disposal of domestic type sewage from septic tank systems, privies, incinerating toilets, mechanical toilets, composting toilets, recycling toilets, or other such systems serving single or multiple-family residences, places of business, or places of public assembly, the effluent from which is designed not to discharge to the land surface or surface waters.***

Par contre, en dehors du cadre d'application du règlement, l'état prévoit une procédure d'approbation au cas par cas « NPDES discharge permit » pour les rejets en surface. Un registre disponible en ligne fait état d'un peu plus de 1148 permis du genre émis (actifs ou expirés). Selon ce registre, aucun permis n'a été émis pour un projet visant une résidence. Concrètement, cette procédure est donc utilisée pour des ouvrages municipaux, communautaires ou industriels.

1.5 CONTAMINANTS : Contaminants encadrés

Le règlement fait mention de divers contaminants généralement retrouvées dans des eaux usées d'origine domestique (BDO5, MES, azote, nitrate, coliformes fécaux, etc.). Selon le tableau 8 du règlement, les eaux clarifiées d'une fosse septique doivent atteindre les seuils prévus ci-dessous.

Table VIII (Influent Quality Standards for Advanced Pretreatment Systems)

Parameter	Influent Not to Exceed (mg/l)*
Biochemical Oxygen Demand (BOD)	350
Total Suspended Solids (TSS)	200
Total Kjeldahl Nitrogen (TKN)	100
Fats, Grease and Oil (FOG)	30

*mg/l is milligrams per liter

Le règlement identifie le niveau de traitement à l'effluent des systèmes de traitement avancé en fonction de leur performance. Cette performance tient compte des contaminants et des seuils prévus au tableau suivant. La nécessité de suivi de ces contaminants pour des installations traitant moins de 1500 gallons/jour au-delà de la phase d'approbation des technologies est toutefois laissé au jugement des autorités locales.

15A NCAC 18A .1970 ADVANCED WASTEWATER PRETREATMENT SYSTEM

(a) ADVANCED PRE-TREATMENT SYSTEM PERFORMANCE STANDARDS: A wastewater system with a design flow of up to 3000 gallons per day approved pursuant to 15A NCAC 18A .1957(c) or .1969 that includes an advanced pretreatment component shall be designed to meet one of the effluent quality standards specified in Table VII prior to dispersal of the effluent to the soil and shall comply with the requirements of this Rule.

Table VII (Effluent Quality Standards for Advanced Pretreatment Systems)

Parameter	NSF-40	TS-I	TS-II
Carbonaceous Biochemical Oxygen Demand (CBOD)	<25 (mg/l)*	<15 (mg/l)	<10 (mg/l)
Total Suspended Solids (TSS)	<30 (mg/l)	<15 (mg/l)	<10 (mg/l)
Total Ammonia Nitrogen (NH3)		<10 (mg/1), or at least 80% removal of NH3 if influent TKN exceeds 50 mg/l	<10 (mg/l)
Total Nitrogen (TN) (TN is Total Kjeldahl Nitrogen plus Nitrate+Nitrite Nitrogen)			<20 mg/l or >60% removal
Fecal Coliform		<10,000 (colonies/100 ml)	<1,000 (colonies/100 ml)

*mg/l is milligrams per liter

[…]

> ***(n) SYSTEM PERFORMANCE: The performance of each system shall be monitored by the certified wastewater treatment facility operator (ORC[1]). A performance report shall be submitted annually to the local health department by the ORC. Type of monitoring and monitoring frequency shall vary by type of approval, the designated performance standard, system design flow, and history of system performance as follows: […]***
>
> ***(4) An Accepted System with a design flow up to 1500 gallons per day shall comply with Subparagraphs (n)(1) and (n)(2) of this Rule and 15A NCAC 18A .1969(h)(9). Routine sampling of individual sites shall no longer be carried out, unless determined to be necessary during the visual inspection of the system pursuant to Subparagraph (n)(1) of this Rule or if required as part of an enforcement action by the local health department or the State. If sampling is determined to be necessary, an alternative monitoring schedule may be proposed by the manufacturer or the State and approved by the Commission when the system is granted accepted Status.[…]***

La concentration en huile et graisse doit également être considérée pour un système de traitement avancé.

> ***15A NCAC 18A .1957 CRITERIA FOR DESIGN OF ALTERNATIVE SEWAGE SYSTEMS***
>
> ***(c) Residential Wastewater Treatment Systems (RWTS) that comply with the National Sanitation Foundation (NSF) Standard 40 for Class I residential wastewater treatment systems shall be designed and constructed and installed in accordance with this Rule to serve a facility with a design daily flow rate of up to 1500 gallons per day, as determined in Rule .1949(a) or .1949(b) of this Section. RWTS shall not be used, however, where wastes contain high amounts of fats, grease and oil (30 mg/l or more), including restaurants and food service facilities, and the strength of the influent wastewater shall be similar to domestic wastewater with raw influent Biological Oxygen Demand (BOD) and suspended solids not to exceed 350 parts per million.***

L'échantillonnage des systèmes n'est pas une obligation en dehors de la phase expérimentale d'approbation des systèmes de traitement avancés ou lorsqu'il s'agit d'une étape incluse dans la routine d'entretien des guides du fabricant.

[1] "Operator in Responsible Charge ('ORC')" means the individual designated by the person owning or controlling the system as the certified operator of record of the system who has primary responsibility for the operation of such system as defined in G.S. 90A-46 and applicable rules of the Water Pollution Control System Operators Certification Commission.

1.6 CERTIFICATION : Entité responsable d'effectuer la certification des différents intervenants et des technologies

L'état est responsable d'approuver la certification des systèmes de traitement avancés. Les fournisseurs doivent déposer, à l'appui de leur demande, le protocole de certification NSF auquel ils ont été soumis ou tout autre protocole équivalent jugé satisfaisant par l'état.

> ***15A NCAC 18A .1969 APPROVAL AND PERMITTING OF ON-SITE SUBSURFACE WASTEWATER SYSTEMS, TECHNOLOGIES, COMPONENTS, OR DEVICES […]***
>
> ***(b) APPLICATION: An application shall be submitted in writing to the State for an E & I system. The application shall include the information required by G.S. 130A-343(d),(e),(f), and (g), and the following, as applicable:***
>
> ***(1) specification of the type of approval requested as either innovative, controlled demonstration, experimental, or a combination;***
>
> ***(2) description of the system, including materials used in construction, and its proposed use;***
>
> ***(3) summary of pertinent literature, published research, and previous experience and performance with the system;***
>
> ***(4) results of any available testing, research or monitoring of pilot systems or full-scale operational systems and shall identify whether the testing, research or monitoring provided was conducted by a third party research or testing organization;***
>
> ***(5) specification of system evaluation protocol as either an approved and listed protocol by the State or the applicant shall submit an alternative protocol for the evaluation of the performance of the manufacturer's system. National Sanitation Foundation (NSF) Standard 40 has been approved as an evaluation protocol pursuant to G.S. 130A-343(d);***
>
> ***(6) verification that a system being submitted for approval has been tested and certified in accordance with an approved evaluation protocol, if applicable. For systems with no prior approval pursuant to this Rule, the manufacturer shall provide an affidavit certifying that the product submitted for approval is the same as the certified or listed product or identify any modifications made to the submitted product.***
>
> ***(7) identity and qualifications of any proposed research or testing organization and the principal investigators, and an affidavit certifying that the organization and principal investigators have no conflict of interest and do not stand to gain financially from the sale of the E & I system;***
>
> ***(8) objectives, methodology, and duration of any proposed research or testing;***

> ***(9) specification of the number of systems proposed to be installed, the criteria for site selection, and system monitoring and reporting procedures;***
>
> ***(10) operation and maintenance procedures, system classification, proposed management entity and system operator;***
>
> ***(11) procedure to address system malfunction and replacement or premature termination of any proposed research or testing;***
>
> ***(12) notification of any proprietary or trade secret information, system, component, or device;***
>
> ***(13) in the case of a request for innovative system approval intended by the applicant to be subsequently reclassified from an innovative to an accepted system, monitoring, reporting and evaluation protocols to be followed by the manufacturer, the results of which shall be submitted in its future petition for accepted status; and***
>
> ***(14) fee payment as required by G.S. 130A-343(k), by corporate check, money order or cashier's check made payable to: North Carolina On-Site Wastewater System Account or NC OSWW System Account, and mailed to the On-Site Wastewater Section, 1642 Mail Service Center, Raleigh, NC 27699-1642 or hand delivered to Rm. 1A-245, Parker Lincoln Building, 2728 Capital Blvd., Raleigh, NC.***

Les professionnels qui interviennent dans la conception des installations septiques doivent être certifiés par l'état à titre de « Registered Sanitarian ». Cette certification est obtenue par la démonstration d'une formation académique adéquate, la réalisation d'un examen d'entrée, la participation à au moins 15 heures de formation continue annuellement, etc.

> ***15A NCAC 18A .1938 RESPONSIBILITIES***
>
> ***(c) Prior to the issuance of an Improvement Permit or Construction Authorization, plans and specifications may be required by the local health department where there is an unsuitable soil or unsuitable characteristic and shall be required for drainage systems serving two or more lots. These plans and specifications shall be required to be prepared by a person or persons who are licensed or registered to consult, investigate, evaluate, plan or design wastewater systems, soil and rock characteristics, ground water hydrology, or drainage systems if required in G.S. 89C, 89E, 89F, and 90A Article 4.***

L'inspection de certains types de systèmes de traitement avancés et certaines opérations de contrôle doivent être effectués par un opérateur certifié si elles ne sont pas prises en charge par les autorités locales. La certification est obtenue par la participation à une formation de 4 à 5 jours et la réalisation d'un examen d'entrée. Bien que le règlement ne soit pas précis à ce sujet, nous

croyons qu'il s'agit d'une certification nécessaire pour un opérateur d'un système de traitement plus imposant, c'est-à-dire, municipal, communautaire, etc.

> ***15A NCAC 18A .1935 DEFINITIONS***
>
> ***(6) "Certified Operator" means a person authorized to operate a wastewater system in accordance with G.S. 90A, Article 3 and applicable rules of the Water Pollution Control System Operators Certification Commission.***

Les installateurs doivent également détenir une classe de certification de I à IV qui leur permet d'installer différents types de systèmes selon leur complexité. La certification est obtenue à la suite d'une formation de 24 à 30 heures selon la classe et la certification doit être renouvelée annuellement à la suite d'un programme de formation continue de 3 à 6 heures.

Il n'y a pas d'autre certification requise.

1.7 CAPACITÉ : Capacité des fosses septiques

La capacité effective « liquid capacity » d'une fosse septique est prévue selon les modalités suivantes :

(b) Minimum liquid capacities for septic tanks shall be in accordance with the following:

(1) Residential Septic Tanks (for each individual residence or dwelling unit):

Residential Septic Tanks (for each individual residence or dwelling unit):		
Number of bedrooms	***Minimum liquid capacity***	***Equivalent capacity per bedroom***
3 or less	***900 gallons***	***300 gallons***
4	***1000 gallons***	***250 gallons***
5	***1250 gallons***	***250 gallons***

(2) Septic tanks for large residences, multiple dwelling units, or places of business or public assembly shall be in accordance with the following:

(A) The liquid capacity of septic tanks for places of business or places of public assembly with a design sewage flow of 600 gallons per day or less shall be determined in accordance with the following: V = 2Q; where V is the liquid capacity of the septic tank and Q is the design daily sewage flow. However, the minimum capacity of any septic tanks shall be 750 gallons.

(B) Individual residences with more than five bedrooms, multiple-family residences, individual septic tank systems serving two or more residences, or any place of business or public assembly where the design sewage flow is greater than 600 gallons per day, but less than 1,500 gallons per day, the liquid capacity of the septic tank shall be designed in accordance with the following: V = 1.17Q + 500; where V is the liquid capacity of the septic tank and Q is the design daily sewage flow. The minimum liquid capacity of a septic tank serving two or more residences shall be 1,500 gallons.

(C) Where the design sewage flow is between 1,500 gallons per day and 4,500 gallons per day, the liquid capacity of the septic tank shall be designed in accordance with the following: V = 0.75Q + 1,125; where V is the liquid capacity of the septic tank and Q is the design daily sewage flow.

1.8 VIDANGE : Encadrement de la vidange des fosses septiques

Le règlement oblige le propriétaire à effectuer la vidange d'une fosse septique selon une méthode de mesurage des solides. Le règlement ne fixe pas de fréquence obligatoire pour la vidange des fosses septiques. Il n'y a pas, non plus, de différence entre un usage principal ou saisonnier. Aucune preuve de vidange n'est exigée.

> ***15A NCAC 18A .1961 MAINTENANCE OF SEWAGE SYSTEMS***
>
> ***Any person owning or controlling the property upon which a ground absorption sewage treatment and disposal system is installed shall be responsible for the following items regarding the maintenance of the system: […]***
>
> ***(2) Ground absorption sewage treatment and disposal systems shall be checked, and the contents of the septic tank removed, periodically from all compartments, to ensure proper operation of the system. The contents shall be pumped whenever the solids level is found to be more than 1/3 of the liquid depth in any compartment.***

1.9 SUIVI : Nécessité de faire le suivi des installations septiques

Le règlement (article 1961) contient des obligations relatives à l'entretien des installations septiques. Les modalités varient en fonction du type de système et du débit de conception (tableau 5a). De plus, le tableau 5b indique qui est responsable de réaliser l'entretien. Le règlement prévoit aussi que tous les systèmes installés après le 1er juillet 1992 doivent faire l'objet d'un suivi selon les modalités des tableaux qui suivent.

> ***15A NCAC 18A .1961 MAINTENANCE OF SEWAGE SYSTEMS***
>
> ***(a) Any person owning or controlling the property upon which a ground absorption sewage treatment and disposal system is installed shall be responsible for the following items regarding the maintenance of the system:***
>
> ***(1) Ground absorption sewage treatment and disposal systems shall be operated and maintained to prevent the following conditions:***
>
> ***(A) a discharge of sewage or effluent to the surface of the ground, the surface waters, or directly into groundwater at any time; or***
>
> ***(B) a back-up of sewage or effluent into the facility, building drains, collection system, or freeboard volume of the tanks; or***
>
> ***(C) a free liquid surface within three inches of finished grade over the nitrification trench for two or more observations made not less than 24 hours apart. Observations shall be made greater than 24 hours after a rainfall event.***
>
> ***The system shall be considered to be malfunctioning when it fails to meet one or more of these requirements, either continuously or intermittently, or if it is necessary to remove the contents of the tank(s) at a frequency greater than once per month in order to satisfy the conditions of Parts (A), (B), or (C) of this Paragraph. Legal remedies may be pursued after an authorized agent has observed and documented one or more of the malfunctioning conditions and has issued a notice of violation.***

TABLE V(a) LOCAL HEALTH DEPARTMENT RESPONSIBILITIES

System classification	*System description*	*Permits required*	*Minimum System Review Frequency*
Type I	*a. Privy* *b. Chemical toilet* *c. Incinerating toilet* *d. Other toilet system* *e. Grease trap*	*Improvement permit, construction autorisation, and operation permit*	*N/A*
Type II	*a. Conventional septic system (single-family or 480 GPD or less)* *b. Conventional septic system with 750 linear feet of nitrification line or less* *c. Conventional system with shallow placement*	*Improvement permit, construction autorisation, and operation permit*	*N/A*
Type III	*a. Conventional septic system > 480 GPD (excluding single-family residence)* *b. Septic system with single effluent pump or siphon* *c. Gravity fill system* *d. Dual gravity field system* *e. PPBPS system, gravity dosed* *f. Large diameter pipe system* *g. Other non-conventional trench systems*	*Improvement permit, construction autorisation, and operation permit*	*5 yrs* *(IIIb only)*
Type IV	*a. Any system with LPP distribution* *b. System with more than 1 pump or siphon*	*Improvement permit, construction autorisation, and operation permit*	*3 yrs*
Type V	*a. Sand filter pretreatmentsystem* *b. Any > 3,000-GPD septic tank system with a nitrification field designed for > 1500 GPD* *c. Aerobic Treatment Unit (ATU)* *d. Other mechanical, biological, or chemical pretreatment plant (< 3000 GPD)*	*Improvement permit, construction autorisation, and operation permit*	*12 mos.*
Type VI	*a. Any > 3,000 GPD system with mechanical, biological, or chemical pretreatment system plant* *b. Wastewater reuse/recycle*	*Improvement permit, construction autorisation, and operation permit*	*6 mos.*

TABLE V(b) MANAGEMENT ENTITY RESPONSIBILITIES

System classification	*Management entity*	*Minimum system inspection / Maintenance frequency*	*Reporting frequency*
Type I	*Owner*	*N/A*	*N/A*
Type II	*Owner*	*N/A*	*N/A*
Type III	*Owner*	*N/A*	*N/A*
Type IV	*Public management entity with a certified operator or a private certified operator*	*2 / yr.*	*12 mos.*
Type V	*Public management entity with a certified operator or a private certified operator*	*a. 2/yr (0-1500 GPD) 4/yr (1500-3000 GPD) 12/yr (3000-10000 GPD) 1/wk (> 10000 GPD) b. 12/yr (3000-10000 GPD) 1/wk (> 10000 GPD) c. 4/yr. d. 12/yr.*	*6 mos.*
Type VI	*Public management entity with a certified operator or a private certified operator*	*a. 1/wk(3000-10000 GPD) 2/wk(10000-25000 GPD) 3/wk(25000-50000 GPD) b. 12/yr.*	*3 mos.*

Enfin, les documents consultés ne contiennent pas de disposition relative à la réalisation d'un inventaire de type relevé sanitaire. Il n'y a pas non plus de détails sur un échantillonnage qui pourrait être requis.

1.10 RESTRICTIONS : Restrictions quant à la localisation des installations septiques

Les composantes des installations septiques doivent être localisées selon les distances minimales prévues au tableau de l'article 1950. Il n'y a pas de distinction basée sur un principe d'étanche/non étanche.

> ***15A NCAC 18A .1950 LOCATION OF SANITARY SEWAGE SYSTEMS***
>
> ***Every sanitary sewage treatment and disposal system shall be located at least the minimum horizontal distance from the following:***

(1) Any private water supply source, including any well or spring	***100 feet;***
(2) Any public water supply source	***100 feet;***
(3) Streams classified as WS-I	***100 feet;***
(4) Waters classified as S.A.	***100 feet, from mean high water mark;***
(5) Other coastal waters	***50 feet, from mean high water mark;***
(6) Any other stream, canal, marsh, or other surface waters	***50 feet;***
(7) Any Class I or Class II reservoir	***100 feet, from normal pool elevation;***
(8) Any permanent storm water retention pond	***50 feet, from flood pool elevation;***
(9) Any other lake or pond	***50 feet, from normal pool elevation;***
(10) Any building foundation	***5 feet;***
(11) Any basement	***15 feet;***
(12) Any property line	***10 feet;***
(13) Top of slope of embankments or cuts of 2 feet or more vertical height	***15 feet;***
(14) Any water line	***10 feet;***
(15) Drainage Systems: ***(A) Interceptor drains, foundation drains, and storm water diversions*** ***(i) upslope*** ***(ii) sideslope and*** ***(iii) downslope*** ***(B) Groundwater lowering ditches and devices***	 ***10 feet;*** ***15 feet, and*** ***25 feet;*** ***25 feet;***
(16) Any swimming pool	***15 feet;***

(17)Any other nitrification field (except repair area)	***20 feet;***

> ***(b) Ground absorption sewage treatment and disposal systems may be located closer than 100 feet from a private water supply, except springs and uncased wells located downslope and used as a source of drinking water, for repairs, space limitations, and other site-planning considerations but shall be located the maximum feasible distance and in no case less than 50 feet.***
>
> ***(c) Nitrification fields and repair areas shall not be located under paved areas or areas subject to vehicular traffic. If effluent is to be conveyed under areas subject to vehicular traffic, ductile iron or its equivalent pipe shall be used. However, pipe specified in Rule .1955 (e) may be used if a minimum of 30 inches of compacted cover is provided over the pipe.***

L'article 1951 détermine des normes d'exception ou des assouplissements aux normes générales. Ces assouplissements sont applicables dans certains contextes.

> ***15A NCAC 18A .1951 APPLICABILITY OF RULES***
>
> ***(a) Except as required in Paragraph (b) of this Rule, the minimum horizontal distance requirements in Rule .1950(a)(4), (11), (12), or (13) shall not apply to the installation of a single septic tank system serving a single-family residence not to exceed four bedrooms on a lot or tract of land:***
>
> ***(1) which, on July 1, 1977, is specifically described in a deed, contract, or other instrument conveying fee title or which is specifically described in a recorded plat; and***
>
> ***(2) which, on July 1, 1977, is of insufficient size to satisfy the minimum horizontal distance requirements in Rule .1950(a)(4), (11), (12), or (13) of this Section; and***
>
> ***(3) which, on the date system construction is proposed to begin, is not capable of being served by a community or public sewerage system.***
>
> ***(b) For those lots or tracts of land described in Rule .1951(a) of this Section, where any of the minimum horizontal distance requirements prescribed in Rule .1950(a)(4), (11), (12), or (13) of this Section can be met, such minimum horizontal distances shall be required.***
>
> ***(c) For those lots or tracts of land described in Rule .1951(a) of this Section, where a specific minimum horizontal distance requirement prescribed in Rule .1950(a)(4), (11), (12), or (13) of this Section cannot be met, the maximum feasible horizontal distance, as determined by the local agency, shall be required. Provided, however, that at least the following minimum horizontal distances shall be required in all cases:***

> ***(1) Rule .1950(a)(4) of this Section, the minimum horizontal distance shall be not less than 50 feet;***
>
> ***(2) Rule .1950(a)(11) of this Section, the minimum horizontal distance shall be not less than 8 feet;***
>
> ***(3) Rule .1950(a)(12) and (13) of this Section, the minimum horizontal distance shall be not less than 5 feet.***
>
> ***(d) All other provisions of this Section except as exempted by this Rule shall apply to the lots or tracts of land described in Rule .1951(a) of this Section. Any rules and regulations of the Commission for Public Health or any local board of health in effect on June 30, 1977, which establish greater minimum distance requirements than those provided for in this Section, shall remain in effect and shall apply to a lot or tract of land to which Rule .1950(a)(4), (11), (12), or (13) of this Section do not apply.***
>
> ***(e) It shall be the responsibility of any owner of a lot or tract of land, who applies for a permit required by Rule .1937 of this Section, and who seeks, under the provisions of Rule .1951(a) of this Section, to exempt his lot or tract of land from any of the minimum horizontal distance requirements of Rule .1950(a)(4), (11), (12), or (13) of this Section to provide to the local health department necessary records of title to the lot or tract of land for which the exemption is sought in order that the local agency may determine whether the applicant is entitled to any such exemption.***
>
> ***(f) For those lots or tracts of land which, on the effective date of this Section, are specifically described in a deed or recorded plat, and the minimum horizontal distance requirements prescribed in Rule .1950(a)(15)(B) cannot be met, the maximum feasible horizontal distance, as determined by the local health department, shall be required, but shall not be less than ten feet.***

Enfin, des normes de localisations sont également adaptées dans le cas où le niveau de traitement de l'effluent atteint un standard de qualité plus élevé. Par exemple pour les systèmes de traitement avancés certifiés NSF 40. Les tableaux 10, 12 et 14 suivants illustrent les normes de distances minimales à respecter.

Table X

Minimum horizontal setbacks for ground absorption systems Where NSF-40 Pretreatment System are used for ≤ 1500 gallons per day	
Land Feature or Component	NSF-40 (feet)
Streams classified as WS-1, except for saprolite	70
Waters classified as S.A., from mean high water mark	70
Other coastal waters from mean high water mark	35
Any other stream, canal, marsh or other surface waters, from normal pool elevation	35
Any Class I or Class II reservoir from normal pool elevation	70
Any permanent storm water retention pond from flood pool elevation	35
Any other lake or pond from normal pool or mean high water elevation	35

Table XII

Minimum horizontal setbacks for ground absorption systems Where TS-I Pretreatment Systems are used for ≤ 1000 gallons per day	
Land Feature or Component	TS-I (feet)
Any public water supply	100
Streams classified as WS-I, except for saprolite	70
Waters classified as S-A, from mean high water mark	70
Other coastal waters, from mean high water mark	35
Any other stream, canal, marsh or other surface waters, from normal pool elevation	35
Any Class I or Class II reservoir, from normal pool elevation	70
Any permanent storm water retention pond, from flood pool elevation	35
Any other lake or pond, from normal pool or mean high water elevation	35
Any building foundation	5
Any basement	15
Any property line	10
Top of slope of embankments or cuts of 2 feet or more vertical height	15
Any water line	10
Upslope interceptor/foundation drains/diversions	7
Sideslope interceptor/foundation drains/diversions	10
Downslope interceptor/foundation drains/diversions	20
Groundwater lowering ditches or devices	20
Any swimming pool	15
Any other nitrification field (except the system repair area)	10

Table XIV: Minimum horizontal setbacks for ground absorption systems Where TS-II Pretreatment Systems are used for ≤ 1000 gallons per day	
Land Feature or Component	TS-II (feet)
Any public water supply	100
Streams classified as WS-I, except for saprolite	50
Waters classified as S-A, from mean high water mark	50
Other coastal waters, from mean high water mark	25
Any other stream, canal, marsh or other surface waters, from normal pool elevation	25
Any Class I or Class II reservoir, from normal pool elevation	50
Any permanent storm water retention pond, from flood pool elevation	25
Any other lake or pond, from normal pool or mean high water elevation	25
Any building foundation	5
Any basement	15
Any property line	10
Top of slope of embankments or cuts of 2 feet or more vertical height	15
Any water line	10
Upslope interceptor/foundation drains/diversions	7
Sideslope interceptor/foundation drains/diversions	10
Downslope interceptor/foundation drains/diversions	15
Groundwater lowering ditches and devices	15
Any swimming pool	15
Any other nitrification field (except the system repair area)	10

1.11 MILIEUX SENSIBLES :

Le point précédent illustre les normes de localisation et le contenu réglementaire relatif aux lacs et cours d'eau. Il n'y a pas de disposition supplémentaire pour ces éléments. Toutefois, des mesures sont prévues relativement aux projets sur des sites en pente moyenne à forte et à proximité de milieux humides (article 1940). Il n'y a pas de norme particulière pour les milieux boisés ou pour les aquifères sensibles.

> ***15A NCAC 18A .1940 TOPOGRAPHY AND LANDSCAPE POSITION***
>
> ***(a) Uniform slopes under 15 percent shall be considered SUITABLE with respect to topography.***
>
> ***(b) Uniform slopes between 15 percent and 30 percent shall be considered PROVISIONALLY SUITABLE with respect to topography.***
>
> ***(c) Slopes greater than 30 percent shall be considered UNSUITABLE as to topography. Slopes greater than 30 percent may be reclassified as PROVISIONALLY SUITABLE after an investigation indicates that a modified system may be installed in accordance with Rule .1956 of this Section; however, slopes greater than 65 percent shall not be reclassified as PROVISIONALLY SUITABLE.***
>
> ***(d) Complex slope patterns and slopes dissected by gullies and ravines shall be considered UNSUITABLE with respect to topography.***
>
> ***(e) Depressions shall be considered UNSUITABLE with respect to landscape position except when the site complies essentially with the requirements of this Section and is specifically approved by the local health department.***
>
> ***(f) The surface area on or around a ground absorption sewage treatment and disposal system shall be landscaped to provide adequate drainage if directed by the local health department. The interception of perched or lateral ground-water movement shall be provided where necessary to prevent soil saturation on or around the ground absorption sewage treatment and disposal system.***
>
> ***(g) A designated wetland shall be considered UNSUITABLE with respect to landscape position, unless the proposed use is specifically approved in writing by the U.S. Army Corps of Engineers or the North Carolina Division of Coastal Management.***

1.12 TOILETTES : Toilettes à compost, toilettes chimiques et toilettes à incinération

L'encadrement des toilettes alternatives est sommaire. Le règlement ne réfère pas aux différents standards internationaux et ne contient pas de norme de construction. Les eaux ménagères doivent faire l'objet d'un traitement selon les normes générales du règlement. L'article 1958 contient les dispositions au sujet des toilettes alternatives.

> ***15A NCAC 18A .1958 NON-GROUND ABSORPTION SEWAGE TREATMENT SYSTEMS***
>
> ***(c) Incinerating, composting, vault privies, and mechanical toilets shall be approved by the state agency or local health department only when all of the wastewater is handled by a system approved under this Section.***
>
> ***[…]***
>
> ***(e) Chemical or portable toilets for human waste may be approved in accordance with G.S. 130A-335. Chemical or portable toilets shall have a watertight waste receptacle constructed of nonabsorbent, acid resistant, noncorrosive material.***

1.13 PERMÉABILITÉ DU SOL :

Le règlement ne définit pas de plage de perméabilité en fonction d'un temps de percolation proprement dit. Il classe plutôt les sols comme étant : propices, potentiellement propices ou impropres « SUITABLE, PROVISIONALLY SUITABLE, or UNSUITABLE ». Ce classement est déterminé en fonction de la classe texturale du sol observé et sa structure. Par exemple, un sol argileux peut être classifié comme potentiellement propice, si sa structure permet une certaine infiltration.

L'épaisseur de sol naturel, le niveau de saturation et tout autre facteur externe pertinent doivent également être évalués pour déterminer si le site est propice ou non. Le classement final tient compte du facteur le plus limitatif.

> ***15A NCAC 18A .1947 DETERMINATION OF OVERALL SITE SUITABILITY***
>
> ***All of the criteria in Rules .1940 through .1946 of this Section shall be determined to be SUITABLE, PROVISIONALLY SUITABLE, or UNSUITABLE, as indicated. If all criteria are classified the same, that classification will prevail. Where there is a variation in classification of the several criteria, the most limiting uncorrectable characteristics shall be used to determine the overall site classification.***

Un site jugé impropre à la mise en place d'un système de traitement par infiltration (faible épaisseur de sol ou mauvaise perméabilité) peut tout de même être utilisé pour y construire un tel système. Cependant, une démonstration doit-être faite à l'effet que la conception tient compte des facteurs limitatifs et que les objectifs de traitement seront atteints (article 1948).

> ***15A NCAC 18A .1948 SITE CLASSIFICATION […]***
>
> ***(c) Sites classified UNSUITABLE have severe limitations for the installation and use of a properly functioning ground absorption sewage treatment and disposal system. An improvement permit shall not be issued for a site which is classified as UNSUITABLE. However, where a site is UNSUITABLE, it may be reclassified PROVISIONALLY SUITABLE if a special investigation indicates that a modified or alternative system can be installed in accordance with Rules .1956 or .1957 of this Section.***
>
> ***(d) A site classified as UNSUITABLE may be used for a ground absorption sewage treatment and disposal system specifically identified in Rules .1955, .1956, or .1957 of this Section or a system approved under Rule .1969 if written documentation, including engineering, hydrogeologic, geologic or soil studies, indicates to the local health department that the proposed system can be expected to function satisfactorily. Such sites shall be reclassified as PROVISIONALLY SUITABLE if the local health department determines that the substantiating data indicate that:***

> ***(1) a ground absorption system can be installed so that the effluent will be non-pathogenic, non-infectious, non-toxic, and non-hazardous;***
>
> ***(2) the effluent will not contaminate groundwater or surface water; and***
>
> ***(3) the effluent will not be exposed on the ground surface or be discharged to surface waters where it could come in contact with people, animals, or vectors.***
>
> ***The State shall review the substantiating data if requested by the local health department.***

Tel que mentionné précédemment, le recours aux rejets de surface (cours d'eau ou fossé) semble être une solution marginale, particulièrement pour le traitement des eaux usées des résidences isolées. Par contre, le règlement permet, entre autres, l'utilisation de sable filtrant pour compenser des conditions de sol jugées impropres à l'infiltration. Le règlement encadre aussi la construction de fossé pour abaisser la nappe phréatique. D'autre part, l'utilisation d'un système de traitement avancé permet aussi de construire un système d'infiltration avec une épaisseur de sol moindre.

> ***15A NCAC 18A .1957 CRITERIA FOR DESIGN OF ALTERNATIVE SEWAGE SYSTEMS***
>
> ***(b) FILL SYSTEM: A fill system (including new and existing fill) is a system in which all or part of the nitrification trench(es) is installed in fill material. A fill system, including an existing fill site, shall be approved where soil and site conditions prohibit the installation of a conventional or modified septic tank system if the requirements of Subparagraphs (b)(1) or (b)(2) of this Rule are met.***

Selon l'article 1958, l'utilisation d'une fosse de rétention est une solution de dernier recours pour les constructions existantes seulement.

> ***15A NCAC 18A .1958 NON-GROUND ABSORPTION SEWAGE TREATMENT SYSTEMS***
>
> ***(b) Holding tanks shall not be considered as an acceptable sewage treatment and disposal system. An improvement permit shall not be issued for a sewage holding tank for any new construction. However, an Authorization to Construct may be issued for a holding tank for pumping and hauling of wastewater effluent to a wastewater system approved under this Section when the owner has provided a showing that a malfunctioning system cannot otherwise be repaired by connection to a system approved under this Section or to a system approved under the rules of the Environmental Management Commission. Pumping and hauling wastewater effluent shall be performed by a septage management firm permitted in accordance with G.S. 130A-291.1.***

1.14 FORTES CONTRAINTES : Solutions pour les sites à fortes contraintes

Tel que mentionné au point 10, le règlement permet des adaptations aux normes de localisation, entre autres, en ce qui concerne la bande riveraine, lorsqu'un système de traitement avancé est utilisé. De plus, ce type de système « advanced wastewater pretreatment system » permet aussi l'utilisation de sable filtrant et d'une épaisseur de sol moindre que pour un système conventionnel (article 1970).

> ***15A NCAC 18A .1970 ADVANCED WASTEWATER PRETREATMENT SYSTEM***
>
> ***(d) NSF-40 SYSTEMS SITING AND SIZING REQUIREMENTS: For systems approved to achieve at least NSF-40 standards and designed for no more than 1500 gallons per day, the following siting and sizing factors apply when designing the soil absorption system:***
>
> ***(1) Trench or bed bottom separation distances are as specified in this Subparagraph. In Table IX, "SWC" means "Soil Wetness Condition," and "USC" means an "UNSUITABLE Soil/Fill Condition," other than a SWC.***

Table IX: Vertical Separation Requirements for NSF-40 Systems ≤1500 gallons per day

Soil/System Criteria	Rule* Reference	Depth from Surface** to UNSUITABLE Soil/Fill Condition		Minimum Vertical Trench/Bed Bottom Separation Requirement			
				Gravity Distribution		Pressure Dispersal	
		Gravity Distribution	Pressure Dispersal	Depth to USC	Depth to SWC	Depth to USC	Depth to SWC
Soil Group I	Rules .1955, .1956, and .1957(a)	24- inches	24-inches	12-inches	12-inches	12-inches	12-inches
Soil Groups II-IV	Rules .1955, .1956, and .1957(a)	24-inches	24-inches	12-inches	12-inches	12-inches	12-inches
New Fill	Rule .1957(b)(1)	18-inches to USC, and 12-inches to SWC	18-inches to USC, and 12-inches to SWC	18-inches	18-inches	18-inches	12-inches
Existing Fill (≤480 gpd only)	Rule .1957(b)(2)	36-inches of Group I Fill/Soils	24-inches of Group I Fill/Soils	36-inches	36-inches	18-inches	18-inches

*Except as allowed in this Rule, all other requirements of the Rules referenced remain applicable
**Minimum depth of soil/fill required at site to permit system. Depth shall be measured from the naturally occurring soil surface or Existing Fill surface, as applicable

Le règlement prévoit également une liste d'exclusions aux marges de recul pour les lots bénéficiant de privilèges au lotissement ou d'une forme de « droits acquis ». Selon l'article 1951, certaines marges de recul peuvent être exemptées d'application pour plutôt faire « du mieux possible » dans ces situations.

> ***15A NCAC 18A .1951 APPLICABILITY OF RULES***
>
> ***(f) For those lots or tracts of land which, on the effective date of this Section, are specifically described in a deed or recorded plat, and the minimum horizontal distance requirements prescribed in Rule .1950(a)(15)(B) cannot be met, the maximum feasible horizontal distance, as determined by the local health department, shall be required, but shall not be less than ten feet.***

Enfin, des dispositions sont prévues pour une partie d'un système situé en zone inondable.

> ***15A NCAC 18A .1950 LOCATION OF SANITARY SEWAGE SYSTEMS***
>
> ***(i) Septic tanks, lift stations, wastewater treatment plants, sand filters, and other pretreatment systems shall not be located in areas subject to frequent flooding (areas inundated at a ten-year or less frequency) unless designed and installed to be watertight and to remain operable during a ten-year storm. Mechanical or electrical components of treatment systems shall be above the 100-year flood level or otherwise protected against a 100-year flood.***

1.15 ÉTUDES : Études préalables et mise aux normes

Les articles 1937 à 1939 du règlement décrivent le processus d'obtention des permis. Les articles 1937 et 1938 sont reproduits en annexe. Selon l'article 1939 du règlement, une étude de caractérisation « site evaluation » doit être réalisée dans le cadre d'une demande d'autorisation.

> ***15A NCAC 18A .1939 SITE EVALUATION***
>
> ***(a) The local health department shall investigate each proposed site. The investigation shall include the evaluation of the following factors:***
>
> ***(1) topography and landscape position;***
>
> ***(2) soil characteristics (morphology);***
>
> ***(3) soil wetness;***
>
> ***(4) soil depth;***
>
> ***(5) restrictive horizons; and***
>
> ***(6) available space.***
>
> ***(b) Soil profiles shall be evaluated at the site by borings or other means of excavation to at least 48 inches or to an UNSUITABLE characteristic and a determination shall be made as to the suitability of the soil to treat and absorb septic tank effluent. Applicants may be required to dig pits when necessary for proper evaluation of the soil at the site.***
>
> ***(c) Site evaluations shall be made in accordance with Rules .1940 through .1948 of this Section. Based on this evaluation, each of the factors listed in Paragraph (a) of this Rule shall be classified as SUITABLE (S), PROVISIONALLY SUITABLE (PS), or UNSUITABLE (U).***
>
> ***(d) The local health department shall determine the long-term acceptance rate to be used for sites classified SUITABLE OR PROVISIONALLY SUITABLE in accordance with these rules.***

L'extrait de l'article 1937, ci-après, décrit les trois situations qui nécessitent une autorisation « Improvement Permit, Authorization for Wastewater System Construction (Construction Authorization) and Operation Permit ».

> ***15A NCAC 18A .1937 PERMITS***
>
> ***(b) An Improvement Permit, Authorization for Wastewater System Construction (Construction Authorization) and Operation Permit, shall be required in accordance with G.S. 130A-336, G.S. 130A-337 and G.S. 130A-338. Rule .1949 of this Section shall be used to determine whether subsequent additions, modifications, or change in the type of facility increase wastewater flow or alter wastewater characteristics.***

Le règlement ne traite pas spécifiquement d'obligations pour les situations de changement d'usage, augmentation de débit ou modification partielle. Toutefois, à la lecture des documents, nous comprenons qu'une installation doit être utilisée à l'intérieur de ses limites de conception. Par conséquent, une modification à la situation nécessite la mise aux normes de l'installation septique.

D'autre part, la forme de la demande d'autorisation est prévue à la Loi. Une classification du site doit notamment être réalisée par un fonctionnaire désigné ou un professionnel indépendant.

> ***North Carolina General Statutes Chapter 130A. Public Health § 130A-336. Improvement permit and authorization for wastewater system construction required***
>
> ***(a) Any proposed site for a residence, place of business, or place of public assembly in an area not served by an approved wastewater system shall be evaluated by either (i) the local health department in accordance with rules adopted pursuant to this Article or (ii) by a professional engineer, licensed soil scientist, or licensed geologist acting within the engineer's, soil scientist's, or geologist's scope of work, as applicable, and pursuant to the conditions of the engineered option permit in G.S. 130A-336.1. An improvement permit issued by a local health department shall include:***
>
> ***(1) For permits that are valid without expiration, a plat, or, for permits that are valid for five years, a site plan.***
>
> ***(2) A description of the facility the proposed site is to serve.***
>
> ***(3) The proposed wastewater system and its location.***
>
> ***(4) The design wastewater flow and characteristics.***
>
> ***(5) The conditions for any site modifications.***
>
> ***(6) Any other information required by the rules of the Commission.***

1.16 AUTRES :

Éléments du Q-2, r.22 qui sont couverts par le territoire visé

Définitions	X
Hiérarchie du choix d'un système	
Obligation de vidange des fosses septiques	X
Méthodes pour établir la perméabilité du sol	
Plages de perméabilité	
Référence aux normes BNQ/NSF	X
Normes de construction des fosses construites sur place	X
Pré filtre	X
Norme spécifique au déboisement (élément épurateur classique)	
Conduite d'amenée, raccordements et ventilation	X
Champ d'application du Règlement/type d'eau	X
Prohibition de rejeter des eaux usées	X
Interdiction d'utiliser certains produits (désinfection de ces eaux usées)	X
Conditions d'émission des permis (plan, études, etc.)	X
Implication d'un professionnel compétent pour la conception (Ordre professionnels)	X
Désaffectation des systèmes	
Gestion des boues et des autres résidus	
Cheminement des eaux et des effluents	
Normes de localisation pour les systèmes étanches et les systèmes non étanches	X
Normes techniques à respecter (matériaux, dimensions, etc.)	X
Conditions d'implantation des systèmes (pente, perméabilité, épaisseur de sol naturel, etc.)	X
Obligation d'entretien et/ou de maintenir un contrat d'entretien des systèmes certifiés	X
Normes de rejet des systèmes	X
Systèmes spécifiquement pour des résidences/bâtiments existants	X
Toilettes à compost	X
Cabinet/toilettes sèches	X
Solutions si ségrégation des eaux (toilettes vs eaux ménagères) (ex : vidange périodique)	
Déclencheurs/droits acquis pour la mise aux normes de systèmes existants	
Dispositions encadrant les rejets au fossé/cours d'eau	X
Déphosphatation	
Désinfection	X
Méthodes de prélèvement et d'analyse des rejets des systèmes	X
Définit la responsabilité des municipalités pour l'application du Règlement	X
Amendes/infractions	X
Dispositions applicables à des territoires particuliers (Basse-Côte-Nord Iles-de-la-Madeleine, etc.)	

Éléments couverts par le territoire visé et qui ne sont pas traités dans le Q-2, r.22

- Modifications possibles aux sites impropres (remblai, drainage)
- Délimitation d'une surface de remplacement future (espace de réserve)
- Normes d'implantation assouplies selon le niveau de traitement
- Aucun dimensionnement fixe, selon taux de charge hydraulique
- Dispositions sur les conduites devant traverser des cours d'eau
- Encadrement de l'assemblage des postes de pompage

ANNEXES Caroline du Nord :

(voir à la page suivante)

(i) "Silty clay loam" means soil material that contains 27 to 40 percent clay and less than 20 percent sand.
(j) "Sandy clay" means soil material that contains 35 percent or more clay and 45 percent or more sand.
(k) "Silty clay" means soil material that contains 40 percent or more clay and 40 percent or more silt.
(l) "Clay" means soil material that contains 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

(59) "State" means the Department of Environment and Natural Resources, Division of Environmental Health.

(60) "Stream" means a natural or manmade channel, including groundwater lowering ditches and devices, in which water flows or stands most of the year.

(61) "Subsurface disposal" means the application of sewage effluent beneath the surface of the ground by distribution through approved nitrification lines.

(62) "TS-I Systems" means advanced pretreatment systems which are approved in accordance with TS-I effluent quality standards in Table VII of Rule .1970.

(63) "TS-II Systems" means advanced pretreatment systems which are approved in accordance with TS-II effluent quality standards in Table VII of Rule .1970.

(64) "Third-Party" means a person or body that is independent of the parties involved which does not gain financially or otherwise benefit from the outcome of the testing, and which has a knowledge of the subject area based upon relevant training and experience.

History Note: *Authority G.S. 130A-335(e) and (f);*
Eff. July 1, 1982;
Amended Eff. July 1, 1995; January 1, 1990; August 1, 1988; April 1, 1985;
Temporary Amendment Eff. June 24, 2003;
Amended Eff. June 1, 2006; May 1, 2004.

15A NCAC 18A .1936 REQUIREMENTS FOR SEWAGE TREATMENT AND DISPOSAL

History Note: *Authority G.S. 130A-335(e);*
Eff. July 1, 1982;
Repealed Eff. January 1, 1990.

15A NCAC 18A .1937 PERMITS

(a) Any person owning or controlling a residence, place of business, or place of public assembly containing water-using fixtures connected to a water supply source shall discharge all wastewater directly to an approved wastewater system permitted for that specific use.

(b) An Improvement Permit, Authorization for Wastewater System Construction (Construction Authorization) and Operation Permit, shall be required in accordance with G.S. 130A-336, G.S. 130A-337 and G.S. 130A-338. Rule .1949 of this Section shall be used to determine whether subsequent additions, modifications, or change in the type of facility increase wastewater flow or alter wastewater characteristics.

(c) An application for an Improvement Permit or Construction Authorization, as applicable, shall be submitted to the local health department for each site prior to the construction, location, or relocation of a residence, place of business, or place of public assembly. Applications for systems required to be designed by a professional engineer and applications for industrial process wastewater systems shall meet the provisions of Rule .1938 of this Section.

(d) The application for an Improvement Permit shall contain at least the following information: owner's name, mailing address, and phone number, location of property, plat of property or site plan, description of existing and proposed facilities or structures, number of bedrooms, or number of persons served, or other factors required to determine wastewater system design flow or wastewater characteristics, type of water supply including the location of proposed or existing well(s), and signature of owner or owner's legal representative. The applicant shall identify property lines and fixed reference points in the field. The applicant shall make the site accessible for an evaluation as required in Rule .1939 of this Section. The applicant shall notify the local health department on the application of the following:

(1) the property contains previously identified jurisdictional wetlands:

(2) wastewater other than sewage will be generated; or
(3) the site is subject to approval by other public agencies.

(e) The application for a Construction Authorization shall contain:
(1) the information required in Paragraph (d) of this Rule; however, a plat or site plan shall not be required with the application for a Construction Authorization to repair a previously permitted system when the repairs will be accomplished on property owned and controlled by the applicant and for which the property lines are readily identifiable in the field;
(2) the locations of the proposed facility, appurtenances, and the site for the system showing setbacks to property line(s) or other fixed reference point(s); and
(3) the proposed system type as specified by the owner or owner's legal representative and that meets the conditions of the Improvement Permit, the provisions of these Rules, and G.S. 130A, Article 11.

(f) An authorized agent of DENR shall issue an Improvement Permit after determining that the site is suitable or provisionally suitable and that a system can be installed so as to meet the provisions of these Rules. The Improvement Permit shall include those items required in G.S. 130A-336(a). An Improvement Permit for which a plat is provided shall be valid without expiration and an Improvement Permit for which a site plan is provided shall be valid for 60 months from the date of issue as provided in G.S. 130A-335(f) and G.S. 130A-336(a). The Improvement Permit is transferable to subsequent owners except as provided in G.S. 130A-335(f) and G.S. 130A-336(a).

(g) The Construction Authorization as provided in G.S. 130A-335(f) and G.S. 130A-336(b) shall be valid for a period equal to the period of validity of the Improvement Permit, not to exceed 60 months. Site modifications required as conditions of an Improvement Permit shall be completed prior to the issuance of a Construction Authorization. The Construction Authorization shall be issued by an authorized agent for the installation of a wastewater system when it is found that the Improvement Permit conditions and rules of this Section are met. The Construction Authorization shall contain conditions regarding system type, system layout, location, and installation requirements. The property owner shall ensure that a Construction Authorization is obtained and is valid prior to the construction or repair of a system. The property owner shall obtain a Construction Authorization prior to the construction, location, or relocation of a residence, place of business, or place of public assembly. If the installation has not been completed during the period of validity of the Construction Authorization, the information submitted in the application for a Permit or Construction Authorization is found to have been incorrect, falsified or changed, or the site is altered, the Permit or Construction Authorization shall become invalid, and may be suspended or revoked. When a Permit or Construction Authorization has become invalid, expired, suspended, or revoked, the installation shall not be commenced or completed until a new Permit or Construction Authorization has been obtained. Revised Construction Authorizations shall be issued for sites where Improvement Permits are valid without expiration in compliance with G.S. 130A-335(f1).

(h) Prior to the issuance of a Construction Authorization for a wastewater system to serve a condominium or other multiple-ownership development where the system will be under common or joint control, a draft agreement (tri-party) among the local health department, developer, and a proposed non-profit, incorporated owners association shall be submitted to the local health department for approval. Prior to the issuance of an Operation Permit for a system requiring a tri-party agreement, the agreement shall be executed among the local health department, developer, and a non-profit, incorporated owners association and filed with the local register of deeds. The tri-party agreement shall address ownership transfer of ownership, maintenance, repairs, operation, and the necessary funds for the continued satisfactory performance of the wastewater system, including collection, treatment, disposal, and other appurtenances.

(i) No residence, place of business, or place of public assembly shall be occupied nor shall any wastewater system be covered or placed into use until an authorized agent issues an Operation Permit. The Operation Permit shall not be issued or reissued until the authorized agent finds that the system is in compliance with Article 11 of G.S. Chapter 130A, these Rules, and all conditions prescribed by the Improvement Permit, and Construction Authorization. The Operation Permit shall specify the system type in accordance with Table V(a) of Rule .1961 of this Section, and shall include conditions for system performance, operation, maintenance, monitoring and reporting. At the review frequency specified in Rule .1961, Table V(a) of this Section, an authorized agent shall determine whether a system in compliance with the conditions of the Operation Permit, these Rules, and Article 11 of G.S. Chapter 130A. An authorized agent may modify, suspend or revoke the Operation Permit or seek other remedies under Article 2, Chapter 130A, if the system is not in compliance with Article 11 of G.S. Chapter 130A, these Rules, and all conditions imposed by the Operation Permit.

(j) For a Type V or VI system as specified in Rule .1961, Table V(a) of Paragraph (b)(9) of this Section, the Operation Permit shall expire either;
(1) 60 months after the Operation Permit is issued for any system installed on or after the effective date of these Rules, or

(2) 60 months after the effective date of these Rules for any system with a valid Operation Permit issued prior to the effective date of these Rules.

(k) Upon determining that an existing wastewater system including all subsystems and system components in a manufactured home park has a valid Operation Permit and is in compliance with Article 11 of G.S. Chapter 130A, these Rules, and permit conditions, an authorized agent shall issue a written authorization for a manufactured home to be connected to the existing system.

(l) Any person other than the owner or controller of a residence, place of business, or place of public assembly, who engages in the business of constructing, installing, or repairing wastewater systems shall register with the local health department in each county where he operates before constructing, installing, or repairing wastewater systems.

(m) An authorized agent shall prepare a written report with reference to the site and soil conditions required to be evaluated pursuant to this Section. When a permit is denied, the report shall be provided to the applicant. If modifications or alternatives are available, information shall be provided to the applicant. The report shall be signed and dated by an authorized agent of the State.

History Note: *Authority G.S. 130A-335(e),(f);*
Eff. July 1, 1982;
Amended Eff. August 1, 1991; January 1, 1990; January 1, 1984;
Temporary Amendment Eff. January 20, 1997;
Amended Eff. August 1, 1998.

15A NCAC 18A .1938 RESPONSIBILITIES

(a) The permitting of a wastewater system shall be the responsibility of agents authorized by the State in accordance with G.S. 130A-40, 130A-50, and registered with the State of North Carolina Board of Sanitarian Examiners if required in G.S. 90A Article 4.

(b) The person owning or controlling the system shall be responsible for assuring compliance with the laws, rules, and permit conditions regarding system location, installation, operation, maintenance, monitoring, reporting, and repair.

(c) Prior to the issuance of an Improvement Permit or Construction Authorization, plans and specifications may be required by the local health department where there is an unsuitable soil or unsuitable characteristic and shall be required for drainage systems serving two or more lots. These plans and specifications shall be required to be prepared by a person or persons who are licensed or registered to consult, investigate, evaluate, plan or design wastewater systems, soil and rock characteristics, ground water hydrology, or drainage systems if required in G.S. 89C, 89E, 89F, and 90A Article 4.

(d) Any wastewater system which meets one or more of the following conditions shall be designed by a registered professional engineer if required by G.S. 89C:

(1) The system is designed to handle over 3,000 gallons per day, as determined in Rule .1949(a) or (b) of this Section, except where the system is limited to an individual septic tank system serving an individual dwelling unit or several individual septic tank systems, each serving an individual dwelling unit.

(2) The system requires pretreatment before disposal, other than by a conventional septic or other system approved under Rule .1957 or .1969 of this Section.

(3) The system requires use of sewage pumps prior to the septic tank or other pretreatment system, except for systems subject to the North Carolina Plumbing code or which consist of grinder pumps and associated pump basins that are approved and listed in accordance with standards adopted by the National Sanitation Foundation.

(4) The individual system is required by Rule .1952 of this Section to use more than one pump or siphon in a single pump tank.

(5) The system includes a collection sewer, prior to the septic tank or other pretreatment system, which serves two or more buildings, except for systems subject to the North Carolina Plumbing Code.

(6) The system includes structures which have not been pre-engineered.

(7) The system is designed for the collection, treatment and disposal of industrial process wastewater, except under the following circumstances:

(A) the State has determined that the wastewater generated by the proposed facility has a pollutant strength which is lower than or equal to domestic sewage, and does not require specialized pretreatment or management, or

(B) the State has pre-approved a predesigned pretreatment system or process and management method proposed by the facility owner which shall enable the industrial process wastewater to have a pollutant strength which is lower than or equal to domestic sewage.

(8) Any other system serving a business or multi-family dwelling so specified by the local health department.

(e) The State shall review and approve the system layout on a site plan or plat, plans and specifications for all systems serving a design unit with a design flow greater than 3,000 gallons per day, as determined in Rule .1949(a) or (b) of this Section, except:

(1) where the system is limited to an individual septic tank system serving an individual dwelling unit or several individual septic tank systems, each serving an individual dwelling unit, or

(2) where the system consists of individual septic tank systems, each serving an individual facility, and which meets all of the following criteria;

(A) each individual system's design flow does not exceed 1500 gallons per day, as determined in Rule .1949(a) or (b) of this Section,

(B) the site for the nitrification field and repair area for each individual system is at least 20 feet from any other individual system site, and

(C) the design wastewater loading on the lot or tract of land containing the design unit is less than 1,500 gallons per day per acre for new or expanded systems and 3,000 gallons per day/acre for malfunctioning systems.

(f) The state shall also review and approve plans and specifications for any industrial process wastewater system required by this Section to be designed by a registered professional engineer and any other system so specified by the local health department.

(g) For systems that require State review and approval, an improvement permit shall not be issued unless the site plan or plat and system layout, including details for any proposed site modifications, are approved. A Construction Authorization shall not be issued unless plans and specifications, including methods of operation and maintenance, are approved.

(h) Prior to issuance of the operation permit for a system required to be designed by a registered professional engineer, the owner shall submit to the local health department a statement signed by a registered professional engineer stating that construction is complete and in accordance with approved plans and specifications and approved modifications. Periodic observations of construction and a final inspection for design compliance by the certifying registered professional engineer or his representative shall be required for this statement. The statement shall be affixed with the registered professional engineer's seal.

(i) Plans and specifications required to be prepared by a registered professional engineer shall contain the information necessary for construction of the system in accordance with applicable rules and laws and shall include any of the following, determined to be applicable by the local health department or the State:

(1) the seal, signature, and the date on all plans and the first sheet of specifications; specifications and reports prepared by the design engineer and licensed or registered professionals who contributed to the plans, specifications, or reports;

(2) a description of the facilities served and the calculations and basis for the design flow proposed;

(3) a site plan based on a surveyed plat showing all system components, public water supply sources within 500 feet, private water supplies and surface water supplies within 200 feet, water lines serving the project and within 10 feet of all components, building foundations, basements, property lines, embankments or cuts of two feet or more in vertical height, swimming pools, storm sewers, interceptor drains, surface drainage ditches, and adjacent nitrification fields;

(4) specifications describing all materials to be used, methods of construction, means for assuring the quality and integrity of the finished product, and operation and maintenance procedures addressing requirements for the system operator, inspection schedules, residuals management provisions, process and performance monitoring schedules, and provisions for maintaining mechanical components and nitrification field vegetative cover;

(5) plan and profile drawings for collection sewers, force mains and supply lines, showing pipe diameter, depth of cover, cleanout and manhole locations, invert and ground surface elevations, valves and other appurtenances, lateral connections, proximity to utilities and pertinent features such as wells, water lines, storm drains, surface waters, structures, roads, and other trafficked areas;

(6) plans for all tanks, showing capacity, invert and ground elevations, access manholes, inlet and outlet details, and plans for built-in-place or nonstate-approved, precast tanks, also showing dimensions, reinforcement details, liquid depth, and other pertinent construction features;

(7) calculations for pump or siphon sizing, pump curves, and plan and profile drawings for lift stations and effluent dosing tanks, showing anti-buoyancy provisions, pump or siphon locations, discharge piping, valves, vents, pump controls, pump removal system, electrical connection details, and activation levels for pumps or siphons and high-water alarms;

(8) plan and profile drawings for wastewater treatment plants and other pretreatment systems, including cross-section views of all relevant system components, and data and contact lists from comparable facilities for any non-standard systems;

(9) plans for nitrification field and repair area, based on an evaluation and report prepared by a person licensed or registered to practice soil science, if required in G.S. 89F showing the following:

(A) field locations with existing and final relative contour lines based on field measurements at intervals not exceeding two feet or spot elevations if field areas are essentially flat or of uniform grade;

(B) field layout, pipe sizes, length, spacing, connection and clean out details, invert elevations of flow distribution devices and laterals, valves, and appurtenances;

(C) trench plan and profile drawings and flow distribution device details; and

(D) location and design of associated surface and groundwater drainage systems; and

(10) any other information required by the local health department or the State.

(j) The entire wastewater sewage system shall be on property owned or controlled by the person owning or controlling the system. Necessary easements, right of ways, or encroachment agreements, as applicable, shall be obtained prior to the issuance of a Construction Authorization for the system installation or repair. Terms of the easement, right-of-way or encroachment agreement shall provide that the easement, right-of-way, or encroachment agreement:

(1) is appurtenant to specifically described property and runs with the land and is not affected by change of ownership or control;

(2) is valid for as long as the wastewater system is required for the facility that it is designed to serve;

(3) describes and specifies the uses being granted and shall include ingress and egress, system installation, operation, maintenance, monitoring, and repairs:

(4) specifies by metes and bounds description or attached plat, the area or site required for the wastewater system and appurtenances including a site for any required system replacement; and

(5) shall be recorded with the register of deeds in the county where the system and facility is located.

History Note: *Authority G.S. 89C; 89E; 89F; 90A; 130A-335(e),(f);*
Eff. July 1, 1982;
Amended Eff. January 1, 1990; April 1, 1985;
Temporary Amendment Eff. January 20, 1997;
Amended Eff. November 1, 1999; August 1, 1998.

15A NCAC 18A .1939 SITE EVALUATION

(a) The local health department shall investigate each proposed site. The investigation shall include the evaluation of the following factors:

(1) topography and landscape position;

(2) soil characteristics (morphology);

(3) soil wetness;

(4) soil depth;

(5) restrictive horizons; and

(6) available space.

(b) Soil profiles shall be evaluated at the site by borings or other means of excavation to at least 48 inches or to an UNSUITABLE characteristic and a determination shall be made as to the suitability of the soil to treat and absorb septic tank effluent. Applicants may be required to dig pits when necessary for proper evaluation of the soil at the site.

(c) Site evaluations shall be made in accordance with Rules .1940 through .1948 of this Section. Based on this evaluation, each of the factors listed in Paragraph (a) of this Rule shall be classified as SUITABLE (S), PROVISIONALLY SUITABLE (PS), or UNSUITABLE (U).

(d) The local health department shall determine the long-term acceptance rate to be used for sites classified SUITABLE OR PROVISIONALLY SUITABLE in accordance with these rules.

SOURCES Caroline du Nord:

1. *North Carolina Department of health and human services, ARTICLE 11 OF CHAPTER 130A OF THE GENERAL STATUTES OF NORTH CAROLINA - WASTEWATER SYSTEMS, Juillet 2018*
2. *Environmental health section, CHAPTER 18 - ENVIRONMENTAL HEALTH, SUBCHAPTER 18A – SANITATION – SECTIONS .1900 to 1971, Avril 2017*
3. *North Carolina General Assembly, CHAPTER 130A – PUBLIC HEALTH, 2018*
4. *North Carolina General Assembly, CHAPTER 90A –SANITARIANS AND WATER AND WASTEWATER TREATMENT FACILITY OPERATORS, 2018*
5. *Site internet de North Carolina Department of health and human services - Environmental health section, https://ehs.ncpublichealth.com/oswp/*

2.0 ILLINOIS

2.1 ENCADREMENT :

L'État de l'Illinois encadre le domaine du traitement des eaux usées domestiques par le biais d'une Loi. C'est la Loi qui fixe les dispositions générales. Cette Loi relève de l'État et c'est le département de la santé « Illinois Department of Public Health (IDPH) » qui est responsable de la mise en place et de l'application de l'encadrement. Cette Loi est complétée par un Code de construction spécifique au domaine. Les documents pertinents sont :

- La Loi « Private Sewage Disposal Licensing Act », dernière mise à jour en 2010
- Le Code « Private Sewage Disposal Code », dernière mise à jour en 2013

L'« Illinois Department of Public Health » s'occupe de tous les systèmes de traitement d'eaux usées, sans limite d'application. Le Code vise principalement les eaux usées d'origine domestique pour des projets de 1 500 gallons (5678 L/jour) et moins. Les projets de plus grand volume ou ayant des eaux usées non domestiques relèvent aussi du département mais sont autorisés au cas par cas. Le texte ci-dessous, extrait du site internet officiel[2] du « Illinois Department of Public Health » résume bien le cadre d'application du traitement des eaux usées en Illinois.

> ***Malfunctioning or improperly constructed and maintained private sewage disposal systems can pose serious health hazards. The Illinois Department of Public Health (IDPH) regulates the installation of all private sewage disposal systems that have no surface discharge (such as septic tanks and seepage fields) as well as those that discharge treated effluent up to 1,500 gallons per day to the ground surface (such as sand filters and aerobic treatment systems). Staff also review and approve plans for private sewage disposal systems and alternative private sewage disposal systems before construction. There are about 90 local health agencies in Illinois that also review sewage disposal system construction plans, either by authority of a local ordinance or as an "agent" of the Department. IDPH also licenses or certifies Private Sewage Disposal Installation Contractors, Private Sewage Disposal Pumping Contractors, Portable Sanitation Businesses, Portable Sanitation Technicians and Portable Sanitation Technician Trainees.***

[2] http://www.dph.illinois.gov/topics-services/environmental-health-protection/private-sewage-disposal

Les articles 3 et 8 de la Loi permettent de saisir comment les projets qui comportent un volume d'eau ou une eau de nature non résidentielle sont gérés.

> ***(225 ILCS 225/3) (from Ch. 111 1/2, par. 116.303)***
>
> ***(12) "Alternative private sewage disposal system" means any system designed to address a unique circumstance where the prescriptive requirements of the private sewage disposal code does not apply, where the final treatment and discharge is free flowing through native soil, and where (i) the projected wastewater is likely to be atypical of residential or domestic wastewater in that flow may exceed 1500 gallons per day; (ii) the 5-day biochemical oxygen demand of the wastewater may exceed 300 milligrams per liter; (iii) any portion of the system is to be shared by 2 or more owners; or (iv) any portion of the treated wastewater is proposed for recycling or reuse.***

> ***(225 ILCS 225/8) (from Ch. 111 1/2, par. 116.308) Sec.***
>
> ***8. (a) In addition to promulgating and publishing the private sewage disposal code, the Department has the following powers and duties: […]***
>
> ***(10) Autorize the use of alternative private sewage disposal systems that are designed by a professional engineer licensed under the Professional Engineering Practice Act of 1989 or an environmental health practitioner licensed under the Environmental Health Practitioner Licensing Act and accepted by the Department on a case-by-case basis where the proposed design reasonably addresses issues particular to the proposed system, including without limitation flow volume projections, wastewater composition and pretreatment, treatment and flow in the subsurface environment, and system ownership and maintenance responsibility.***

Enfin, c'est l'État qui est responsable de l'application de la Loi et du Code. Toutefois, en vertu de l'article 9 de la Loi, le « Illinois Department of Public Health » peut désigner les autorités locales pour assurer l'administration et l'application des règles.

> ***(225 ILCS 225/9) (from Ch. 111 1/2, par. 116.309)***
>
> ***Sec. 9. In the administration and enforcement of this Act and the private sewage disposal code, the Department may designate and use full-time municipal, district, county or multiple county health departments as its agents.***

2.2 TYPE D'EAU : Types d'eau visés par l'encadrement

Le règlement vise principalement la gestion des eaux usées de nature domestique. Cependant, elles sont définies, dans la Loi, comme pouvant contenir des eaux de différents bâtiments ou usages (article 3).

> ***"Domestic Sewage" means waste water derived principally from dwellings, business or office buildings, institutions, food service establishments and similar facilities.***

Le Code aborde aussi la question de la nature des eaux à l'article 905.20. Cet article prévoit des dispositions dans le cas de rejets d'adoucisseur d'eau ou de drains de plancher de garage ou de rejet d'eau de nature autre que domestique.

> ***Section 905.20 General Requirements***
>
> ***b) Type of Waste. A private sewage disposal system shall be designed to receive all waste from the buildings served.***
>
> ***1) Prohibited Influent. No sub-soil drainage, discharge from roof drains or swimming pool wastewater shall be directed to the private sewage disposal system.***
>
> ***2) Hot Tub Wastewater. Wastewater generated by a hot tub or similar device shall be discharged to one of the following:***
>
> ***A) A separate subsurface seepage system, provided that the seepage field is designed to accommodate the liquid capacity of the hot tub on a daily basis. A septic tank is not required in front of a seepage field receiving flow from this device.***
>
> ***B) The seepage field serving the domestic wastewater flow, provided the seepage field is increased in size to accommodate the additional flow from the hot tub on a daily basis. This drainage shall be piped around the septic tank and directly into the seepage field.***
>
> ***3) Motorized Equipment. Waste products, such as automotive grease, oils, solvents and chemicals, shall not discharge to a private sewage disposal system. These waste products shall be handled according to rules for disposal of oil, gas and grease promulgated under the Environmental Protection Act, or according to 35 Ill. Adm. Code, Subtitle G, or shall be taken to an oil and gas reclamation center. The floor drain of any non-residential property that meets the requirements of subsection (b)(3)(A) or (B), and is connected to a public sewer, shall be connected to an approved gas and oil interceptor meeting the requirements of Section 890.520 of the Illinois Plumbing Code. Wastes from floor drains in areas where vehicles or motorized equipment are serviced and parked shall be treated in accordance with the following:***

A) For any non-residential property in which a floor drain may receive fluids from vehicle or motorized equipment repair or maintenance activities, floor drains shall be connected to a public sewer or holding tank and not to a private sewage disposal system. Repair and maintenance facilities shall include, but shall not be limited to, service stations and auto body, muffler, transmission, small engine, and brake repair shops. Floor drains in any facility that performs vehicle or motorized equipment repair work shall be connected to a public sewer or holding tank. If the floor drain is connected to a public sewer, then the floor drain shall be connected to an approved gas and oil interceptor meeting the requirements of Section 890.520 of the Illinois Plumbing Code. If the floor drain is connected to a holding tank, a gas and oil interceptor is not required. The holding tank shall be constructed of the same materials required for gas and oil interceptors.

B) For any non-residential property on which vehicles or motorized equipment are parked or stored and repair or maintenance is not performed, floor drains shall discharge to a public sewer or a private sewage disposal system, provided that floor drains are used only to receive water from motorized equipment or vehicle washing or to drain melted snow. When floor drains in such properties are connected to a private sewage disposal system, the system shall be increased in size based upon the anticipated daily flow. When a maintenance area is adjacent to a parking area, physical barriers, such as a raised curb or recessed floor in the maintenance area, shall be provided to assure that oil and gas are not discharged to floor drains.

C) For any residential property with a garage of any size, floor drains may discharge directly to a private sewage disposal system. No increase in size of the residential private sewage disposal system is required to handle this liquid waste.

4) Drains or fixtures receiving any product other than domestic sewage or wastewater specified in subsection (b)(2) shall be discharged to an approved treatment or disposal system that is regulated and approved by the State or to a holding tank and not to a private sewage disposal system.

5) Water Softener Wastewater. Backwash water from a water softener or similar device shall be discharged to one of the following:

A) A separate subsurface seepage system, provided that the seepage field is designed to accommodate the liquid capacity of the water softener on a daily basis. A septic tank is not required in front of a seepage field receiving flow from this device.

B) A separate building drain, in accordance with the Illinois Plumbing Code, that will discharge to a subsurface seepage system, provided that the seepage field is designed to accommodate the flow from this device on a daily basis. A septic tank is not required in front of a seepage field receiving flow from this device.

2.3 DENSITÉ MAXIMALE : Densité maximale des installations septiques

Le Code encadre la densité des installations septiques et leur impact cumulatif dans les situations de rejets de surface seulement (article 905.110). L'effet cumulatif des rejets de surface est limité par un ratio (nombre maximum d'installations par superficie du plan d'eau en aval). Ces dispositions ne sont pas limitées d'application à un partie spécifique du territoire.

> ***Section 905.110 Effluent Discharges***
>
> ***a) General. Buried sand filters, re-circulation sand filters, waste stabilization ponds, aerobic treatment plants and NSF International/ANSI Standard 40 wastewater treatment systems listed by NSF International/ANSI Standard 40 as Class I effluent (see Section 905.100(a) and (c)) or any Department approved or accepted system may be discharged to any one of the following 3 options:***
>
> ***1) A receiving stream, river, lake or pond that provides greater than a 5:1 dilution of the effluent, based on the 7-day, 10-year low flow rate. A discharge within 10 feet of one of these receiving bodies of water shall be considered to be a discharge to the receiving body of water. Discharges greater than 10 feet from the receiving body of water shall comply with subsection (a)(2) or (3). Discharges to a lake or pond shall be limited to 2 discharges per surface acre of water. More than 2 discharges may occur per individual surface acre of water; however, the total number of discharges to total surface acres of water shall not exceed a ratio of 2:1. An example of this is as follows: In a 20-acre lake, several discharges may enter the lake in a ½-acre cove; however, the total discharges entering the lake would be limited to 40. Where discharges are not equally distributed around a lake or pond, the Department or local authority shall be consulted to assure that nuisance conditions are not created.***

2.4 REJETS : Rejets en surface

Le volet des rejets de surface n'a pas à être abordé dans le cadre du projet de recherche pour l'État de l'Illinois (document d'appel d'offres). Toutefois, nous avons pris la liberté de traiter quand même ce volet parce que l'État traite cet aspect de manière détaillée. Le contenu du Code, à cet effet, est l'un des plus étoffé rencontré dans le projet.

> ***Section 905.110 Effluent Discharges***
>
> ***a) General. Buried sand filters, re-circulation sand filters, waste stabilization ponds, aerobic treatment plants and NSF International/ANSI Standard 40 wastewater treatment systems listed by NSF International/ANSI Standard 40 as Class I effluent (see Section 905.100(a) and (c)) or any Department approved or accepted system may be discharged to any one of the following 3 options:***
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>
> ***2) A common collector, provided that the collector does not discharge within one mile upstream from a public water supply intake, public bathing beach, or to any public use area. A public use area is any area that is frequently used by the public. Examples of a public use area are playgrounds and picnic areas. Discharges from lots platted (e.g., individual lots, subdivisions, commercial developments) after January 1, 2014 are not eligible to discharge into a common collector.***
>
> ***3) The ground surface, where the discharge points of private sewage disposal systems with surface discharges do not exceed an average of one per acre and the effluent does not pond or create a nuisance condition.***
>
> ***b) Whenever a subdivision is platted that does not provide private sewage disposal systems in compliance with Section 905.60 or subsection (a) of this Section, then a sewage system in compliance with 35 Ill. Adm. Code 301 shall be provided.***

c) When lots have been platted prior to March 15, 1996, the applicant for plan approval or local authority approval may apply for a variance to this Section in accordance with the provisions of Section 905.20(l).

d) Effluent Limitations

1) Surface discharging private sewage disposal systems shall not exceed the following effluent standards:

A) The system shall comply with NSF International/ANSI Standard 40, Section 8.5.2.1.1 for carbonaceous 5-day biochemical oxygen demand ($CBOD_5$) and Section 8.5.2.1.2 for total suspended solids (TSS).

B) No effluent shall contain settlable solids.

C) Color, odor and turbidity shall be reduced to below discernable levels.

D) No effluent shall contain floating debris, visible oil, grease, scum or sludge solids.

E) Fecal coliform bacteria concentration shall not exceed 400 organisms per 100 ml.

F) Sample Ports. After January 1, 2014, any surface-discharging system installed, repaired, renovated or replaced shall have a sample port of at least 4 inches in diameter or free-fall discharge of at least 12 inches located after the disinfection component, which extends to 3 inches or more above the ground surface. A sample port is not required if a free-fall discharge is within 200 feet of the disinfection device. The sample cannot be taken from a common collector or drainage tile, but must be taken from a discharge point that discharges only the treated effluent from the surface- discharging private sewage disposal system.

G) A surface-discharging system installed after January 1, 2014 shall not discharge to a roadside ditch as stipulated in the Illinois Highway Code [605 ILCS 5/9-123].

2) Samples shall be analyzed in accordance with the Standard Methods for the Examination of Water and Wastewater.

e) Private sewage disposal systems designed to be compliant with subsection (d) can be discharged to a subsurface seepage field designed and constructed to be at least ⅔ the size determined necessary by Section 905.60. The subsurface system shall be installed to be as shallow as possible while maintaining a minimum of 6 inches of cover and one foot of separation from the bottom of the trench to the shallowest limiting layer.

Section 905.115 NPDES Permit Compliance

For those surface discharging private sewage disposal systems from which effluent enters into the Waters of the United States that require a general NPDES permit, a permit can be obtained from the US Environmental Protection Agency (USEPA) or the Illinois Environmental Protection Agency (IEPA). Systems permitted under the general NPDES permit shall be in compliance with the terms and conditions of the general NPDES permit. A surface discharging private sewage disposal system that is required to be permitted under an individual NPDES permit shall be in compliance with the terms and conditions of the individual NPDES permit. Information about the applicability of the NPDES permit for surface discharging private sewage disposal systems shall be obtained from USEPA or IEPA.

Section 905.120 Disinfection

a) As of January 1, 2014, the effluent from any new, repaired or replaced private sewage disposal system that is designed and approved to have a discharge point shall be disinfected prior to discharge.

b) Chlorine Feeders. Chlorination equipment shall have a means of removal of solids. Appendix A, Illustration S provides an example of a typical chlorine feeder. All chlorine feeders shall meet the requirements of Appendix A, Illustration S. Other feeders that meet the requirement of this Section are also acceptable.

c) Chlorine Contact Tanks. Chlorine contact tanks shall be baffled and shall provide a contact time of at least 30 minutes based on 2½ times the average flow. The minimum contact tank capacity shall be 30 gallons. Access to the distribution feeder shall extend to the ground surface.

d) Chlorine Residual. A final effluent free chlorine residual of 0.2 to 1.5 mg/1 shall be maintained.

e) Chlorine products used for the disinfection of treated wastewater effluent shall be used according to the product's labeling.

f) After January 1, 2014, any disinfection process or equipment that does not meet the requirements of NSF International/ANSI Standard 46, Section 11 or does not provide proper disinfection as determined by adequate third party testing will not be approved for installation.

g) When the private sewage disposal system incorporates a discharge to a subsurface seepage system as a method to reduce the amount of effluent at the discharge point, the disinfection device shall be the last component prior to the discharge point.

2.5 CONTAMINANTS : Contaminants encadrés

Les documents ne fixent pas de seuils, en termes de contaminants (DBO5, MES, etc.), pour définir les eaux usées de nature domestique. Toutefois, il prévoit un encadrement des paramètres de DBO5C, matières en suspensions et dans certaines situations, de coliformes fécaux pour certains types de systèmes. C'est le cas notamment des systèmes avec rejets en surface qui nécessitent une désinfection en plus de référer au standard NSF 40 (25 mg/l DBO5C, 30 mg/l MES, 6.0-9.0 pH) :

> ***Section 905.110 Effluent Discharges***
>
> ***d) Effluent Limitations***
>
> ***1) Surface discharging private sewage disposal systems shall not exceed the following effluent standards:***
>
> ***A) The system shall comply with NSF International/ANSI Standard 40, Section 8.5.2.1.1 for carbonaceous 5-day biochemical oxygen demand ($CBOD_5$) and Section 8.5.2.1.2 for total suspended solids (TSS).***
>
> ***B) No effluent shall contain settlable solids.***
>
> ***C) Color, odor and turbidity shall be reduced to below discernable levels.***
>
> ***D) No effluent shall contain floating debris, visible oil, grease, scum or sludge solids.***
>
> ***E) Fecal coliform bacteria concentration shall not exceed 400 organisms per 100 ml.***

Les systèmes à de type goute à goute « drip irrigation » prévoient également un prétraitement visant des cibles de DBO5C et MES.

> ***Section 905.60 Subsurface Seepage System Construction Requirements […]***
>
> ***g) Subsurface Drip Irrigation Systems. Subsurface drip irrigation systems shall be designed, installed and maintained in accordance with the following:***
>
> ***1) The drip irrigation system shall be designed, installed and operated as a subsurface seepage system, and no portion of the drip irrigation system shall have a surface discharge.***
>
> ***A) Pre-treatment***
>
> ***i) The drip irrigation system shall be preceded by a pre-treatment process designed to reduce the $CBOD_5$ (carbonaceous 5-day biochemical oxygen demand) to a maximum concentration of 25 mg/L and total suspended solids to a maximum concentration of 30 mg/L. Drip irrigation systems shall not be installed following***

> ***a septic tank without any pre-treatment process capable of meeting this Part's requirements.***

Les documents ne traitent pas des contaminants tels que le phosphore ou l'azote. Le suivi des contaminants n'est pas encadré par la Loi ni le Code.

2.6 CERTIFICATION : Entité responsable d'effectuer la certification des différents intervenants et des technologies

Les fabricants de diverses composantes doivent respecter des normes de certification internationale telles que NSF et ASTM :

- NSF/ANSI 40 – Residential onsite systems
- NSF/ANSI 41 – Non-liquid systems
- NSF/ANSI 46 – Wastewater treatment system components devices
- Standards ASTM pour les conduites.

D'autre part, en vertu de la Loi le « Illinois Department of Public Health » est responsable de certifier les entrepreneurs/installateurs et les entreprises de services sanitaires (vidange et toilettes portatives) (articles 5, 5a et 5b). La certification des installateurs nécessite la réussite d'un examen écrit et le paiement de frais annuel. Aucune qualification n'est toutefois requise pour les responsables de l'entretien des systèmes de traitements qui peut être réalisé par le propriétaire en suivant les guide du fabriquant.

> ***(225 ILCS 225/5) (from Ch. 111 1/2, par. 116.305)***
>
> ***Sec. 5. (a) The Director shall issue a private sewage system installation contractor license or a private sewage disposal system pumping contractor license to persons applying for such license who successfully pass a written examination prepared by the Department and who pay the required annual license fee in an amount determined by the Department. Each person who holds a currently valid plumbing license issued under the Illinois Plumbing License Law shall not be required to pay the annual license fee required by this Section, but such licensed person shall comply with all other provisions of this Act, including the requirement for examination for licensure.***
>
> ***(b) A license issued under this Act shall expire on December 31 of the year issued, except that an original license issued after October 1 and before December 31 shall expire on December 31 of the following year. The Department shall reinstate a license which expires while a licensee is in the active military service of the United States upon application to the Department by the former licensee within 2 years after termination of such military service, payment of the annual license fee, and submission of evidence of such military service. Such license shall be reinstated without examination and without payment of the reinstatement fee.***
>
> ***(c) A private sewage disposal system pumping contractor or a private sewage system installation contractor whose license has expired for a period of less than 3 years may apply to the Department for reinstatement of his license. The Department shall issue such renewed license provided the applicant pays to the Department all lapsed license fees, plus a reinstatement fee determined by the***

Department. A license which has expired for more than 3 years may be restored only by reapplying to take the examination and by successfully passing the written examination.

(225 ILCS 225/5a) (from Ch. 111 1/2, par. 116.305a)

Sec. 5a. All applicants shall be tested and required to attain a passing grade prescribed by the Department on an examination which evaluates the applicants' general knowledge of the design, installation, operation, maintenance and servicing of on-site waste water disposal systems. Applications for examination shall be in the form prescribed by the Department and shall be accompanied by the required fee determined by the Department. The Department shall conduct written examinations at least 2 times a year and may require a practical demonstration by each applicant. The written examination shall be prepared by the Department. Persons holding a valid license on the effective date of this amendatory Act of 1985 shall be required to pass the written examination by December 31, 1989. A license will not be renewed after December 31, 1989, unless the person holding the license has successfully passed the written examination.

(225 ILCS 225/5b)

Sec. 5b. Licensure required for the maintenance of portable toilets and potable handwashing units; cleanliness standards.

(a) The Department shall by rule, establish and issue a separate license, independent of any other license issued under this Act, for the pumping, hauling, and disposal of wastes removed from the sewage disposal systems of portable toilets and portable, potable handwashing units and the cleaning, sanitizing, and maintenance of portable toilets and portable, potable handwashing units to qualified businesses responsible for the pumping, hauling, and disposal of wastes removed from the sewage disposal systems of portable toilets and portable, potable handwashing units and the cleaning, sanitizing, and maintenance of portable toilets and portable, potable handwashing units. These rules shall concern, but not be limited to, all of the following areas:

(1) License duration and expiration, renewal, reinstatement, and inactive status.

(2) All fees relating to initial licensure and renewal.

(3) Licensure application form and process.

(4) Violations and penalties.

(5) Exemptions and waivers.

(6) Ventilation, safety, and security requirements of portable toilet units and the sewage disposal systems of portable toilet units.

(a-5) The Department shall by rule, establish and issue a certificate of registration as a portable sanitation technician for any employee of a business

licensed under this Section who engages in the servicing of portable toilets and portable, potable handwashing units and the cleaning, sanitizing, and maintenance of portable toilets and portable, potable handwashing units. Beginning 6 months after the date of the adoption of Department rules implementing the provisions of this amendatory Act of the 95th General Assembly, no person may engage in the servicing of portable toilets in a manner that does not comply with the requirements of this Act and the rules established by the Department under this Act concerning the issuance of a certificate of registration as a portable sanitation technician. Prior to a registrant's initial renewal of his or her certificate of registration, the registrant must complete a certification program approved by the Department.

(b) Beginning 6 months after the date of the adoption of Department rules implementing the provisions of this amendatory Act of the 95th General Assembly, no person or business may engage in the pumping, hauling, and disposal of wastes removed from the sewage disposal systems of portable toilets and portable, potable handwashing units and the cleaning, sanitizing, and maintenance of portable toilets and portable, potable handwashing units without being licensed or certified under this Section.

(c) The Department shall require the successful completion of an examination, prescribed by the Department, prior to licensure. The Department may accept the Portable Sanitation Association International's Health and Safety Certification Program as an acceptable educational and testing program.

(d) The Department shall consider and make any necessary amendments to the private sewage disposal code in relation to a license issued for the pumping, hauling, and disposal of wastes removed from the sewage disposal systems of portable toilets and portable, potable handwashing units and the cleaning, sanitizing, and maintenance of portable toilets and portable, potable handwashing units.

(e) The Department shall establish and enforce standards of cleanliness for companies that sell, lease, rent, or otherwise maintain portable toilet units and portable, potable handwashing units for commercial purposes, which shall include, but not be limited to, the following requirements:

(1) Each unit shall be thoroughly cleaned at each pumping, including all parts of the unit, which are the urinal, tank, walls, floors, door, and roof.

(2) Soap or anti-bacterial hand cleaner and paper products shall be refilled in each unit at each pumping, if required.

(3) After a unit is cleaned, it shall be inspected to ensure compliance with Department rules concerning the ventilation, safety, and security of the unit.

(4) A company shall designate at least one representative who shall be responsible for ensuring that each unit maintained by the company meets the

> ***standards of cleanliness set forth in this subsection (d) and any additional standards established by the Department.***
>
> ***(5) Those persons engaging in cleaning units shall wear protective equipment and be trained in proper procedures for sanitation and self-protection.***

Le Code contient aussi des dispositions relatives aux actes posés par les entreprises ou personnes certifiées (article 905.20).

> ***Section 905.20 General Requirements***
>
> ***r) Installation Contractor On Site. A licensed Private Sewage Disposal System Installation Contractor shall be present at the site during construction, installation, repair, modification or maintenance of a private sewage disposal system. Cleaning, pumping, disposing and hauling of waste from a private sewage disposal system shall be done by a licensed Private Sewage Disposal System Pumping Contractor. A person who owns and occupies a single family dwelling and who constructs, installs, maintains, services or cleans the private sewage disposal system which serves his/her single family residence shall not be required to be licensed under this Section; however, such person shall comply with all other provisions of the Act and this Part. (Section 4 of the Act)***
>
> ***s) Construction and Excavation. Any construction or excavation performed by any individual other than the person who owns and occupies a single family dwelling shall be performed by a licensed Private Sewage Disposal System Installation Contractor or an individual under the direct supervision of a licensed Private Sewage Disposal Installation Contractor.***
>
> ***t) Alternative Technology. The Department may issue approval for a private sewage disposal system or a system component that has been approved by another governmental body or an approved certification agency, based upon, but not limited to, the review of the following information: submittals to other governmental bodies; analysis from third party testing; testing results from other governmental bodies; and historical use within the jurisdiction of other governmental bodies.***

D'autre part, les professionnels en sols doivent être membre d'une association professionnelle, ou ingénieur (Code, article 905.10).

> ***"Soil Classifier" means one of the following:***
>
> ***A Certified Professional Soil Classifier (CPSC) who is certified by the Illinois Soil Classifiers Association (ISCA) or a certified soil classifier with the American Registry of Certified Professionals in Agronomy, Crops and Soils (ARCPACS).***

> ***A person who is a full member or associate member of the Illinois Soil Classifiers Association (ISCA), provided that direct supervision is provided to this person by an ISCA Certified Professional Soil Classifier or ARCPACS certified soil classifier who accompanies the person on at least 25% of the soil investigations and reviews and signs all of that person's soil investigation reports.***

L'article 905.55 du Code contient aussi des dispositions sur les actes que posent les consultants.

> ***Section 905.55 Subsurface Seepage System Design Requirements***
>
> ***After January 1, 2014, when designing a subsurface seepage system, the absorption capacity of the soil shall be determined by subsection (a). After January 1, 2014, subsection (b) shall not be used to determine design requirements for a subsurface system.***
>
> ***a) Soil Investigation***
>
> ***2) The following persons are qualified to conduct soil investigations:***
>
> ***A) any person who meets the definition of soil classifier in Section 905.10;***
>
> ***B) an Illinois licensed Professional Engineer;***
>
> ***C) an employee of a local health department who has 3 years of experience in designing or approving private sewage disposal systems using soil classification information and 6 semester hours of soils-related coursework;***
>
> ***D) an employee of a local health department with 5 years of experience reviewing the design and approving private sewage disposal systems using soil classification information under the direct supervision of those persons listed in subsection (a)(2)(A), (B) or (C).***

2.7 CAPACITÉ : Capacité des fosses septiques

La capacité effective « liquid capacity » minimale exigée pour les fosses septiques est détaillée dans le tableau ci-dessous. (Code, article 905.40 et Illustration F).

> ***Section 905.40 Septic Tanks***
>
> ***c) Capacity***
>
> ***1) Septic tanks for individual residences shall be sized in accordance with Appendix A, Illustration F. Septic tanks for any establishment other than residential property shall be sized in accordance with the estimated flow provided in Appendix A, Illustration A and as provided in subsection (c)(2).***
>
> ***2) The volume below the liquid level for flows up to 500 gallons per day shall be at least 750 gallons. For flows greater than 500 gallons per day, the volume shall be equal to at least 1½ the estimated daily sewage flow. When the total flow exceeds 1,350 gallons per day, 2 or more tanks in series, or a multi-compartment tank, shall be installed.***

Section 905.APPENDIX A Illustrations and Exhibits

Section 905.ILLUSTRATION F Minimum Volumes for Septic Tanks Serving Residential Units

NUMBER OF BEDROOMS	MINIMUM LIQUID CAPACITY OF TANK (GALLONS)	MINIMUM LIQUID CAPACITY OF TANK (GALLONS) WHEN GARBAGE GRINDER IS USED
2 or less	750	1125
3	1000	1500
4	1250	2000
5	1500	2200
6	1750	2600
7	2000	3000

2.8 VIDANGE : Encadrement de la vidange des fosses septiques

La vidange est prévue selon la méthode de mesure de l'écume et des boues réalisée au cours des trois premières années d'opération d'une installation mais sans précision sur des adaptations selon le caractère permanent ou saisonnier. Par la suite la mesure est espacée au 5 ans. Les modalités d'entretien varient selon le type de système de traitement, notamment au sujet de la vidange des fosses septiques et sont plus détaillés à la section suivante. Une preuve de vidange ne doit pas être fournie aux autorités compétentes mais doit être disponible sur demande.

> ***Section 905.20 General requirements***
>
> ***q) Maintenance of Private Sewage Disposal Systems […]***
>
> ***3) After January 1, 2014, private sewage disposal systems installed and permitted under Section 905.190 are required to be maintained and serviced to ensure proper operation in accordance with the following:***
>
> ***A) Septic tank to a subsurface seepage system or septic tank followed by a sand filter discharging to a subsurface seepage system.***
>
> ***i) Private sewage disposal system septic tanks serving residential properties shall be evaluated prior to or within 3 years after the date of installation of the system. The system may be evaluated by the homeowner, a Private Sewage Disposal System Installation Contractor, a licensed Environmental Health Practitioner, an Illinois licensed Professional Engineer, a representative of the Department, or an agent of the Department or local health department. The evaluation shall determine whether the tanks and all of the compartments of the private sewage disposal system have layers of scum and settled solids greater than 33% of the liquid capacity of the tank. If the layers of scum and settled solids are greater than 33%, the tanks and compartments shall be pumped out and maintenance shall be performed. After the first evaluation, the system shall be evaluated a minimum of once every 5 years. Depending on the system's use, the tanks and compartments may need to be evaluated and pumped more frequently.***

2.9 SUIVI : Nécessité de faire le suivi des installations septiques

Certaines modalités d'entretien obligatoire sont prévues au règlement en fonction du type de système de traitement. Certaines opérations de suivi peuvent être réalisées par le propriétaire dans le cas de systèmes simples alors que des systèmes plus complexes nécessitent un entretien par un tiers qualifié.

> ***q) Maintenance of Private Sewage Disposal Systems […]***
>
> ***3) After January 1, 2014, private sewage disposal systems installed and permitted under Section 905.190 are required to be maintained and serviced to ensure proper operation in accordance with the following:***
>
> ***A) Septic tank to a subsurface seepage system or septic tank followed by a sand filter discharging to a subsurface seepage system.***
>
> ***i) Private sewage disposal system septic tanks serving residential properties shall be evaluated prior to or within 3 years after the date of installation of the system. The system may be evaluated by the homeowner, a Private Sewage Disposal System Installation Contractor, a licensed Environmental Health Practitioner, an Illinois licensed Professional Engineer, a representative of the Department, or an agent of the Department or local health department. The evaluation shall determine whether the tanks and all of the compartments of the private sewage disposal system have layers of scum and settled solids greater than 33% of the liquid capacity of the tank. If the layers of scum and settled solids are greater than 33%, the tanks and compartments shall be pumped out and maintenance shall be performed. After the first evaluation, the system shall be evaluated a minimum of once every 5 years. Depending on the system's use, the tanks and compartments may need to be evaluated and pumped more frequently.***
>
> ***ii) Private sewage disposal system septic tanks serving non-residential property shall be evaluated within 3 years after the date of installation of the system. The system may be evaluated by a Private Sewage Disposal System Installation Contractor, a licensed Environmental Health Practitioner, an Illinois licensed Professional Engineer, a representative of the Department, or an agent of the Department or local health department. The evaluation shall determine whether the tanks and all of the compartments of the private sewage disposal system have layers of scum and settled solids greater than 33% of the liquid capacity of the tank. If the layers of scum and settled solids are greater than 33%, the tanks and compartments shall be pumped out and maintenance shall be performed. After the first evaluation, the system shall be evaluated at minimum once every 3 years. Depending on the system's use, the tanks and compartments may need to be evaluated and pumped more frequently.***
>
> ***B) An aerobic treatment unit (ATU) requires evaluation and maintenance at least once every 6 months. The system may be evaluated by a Private Sewage Disposal System Installation Contractor, a licensed Environmental Health***

Practitioner, an Illinois licensed Professional Engineer, a representative of the Department, or an agent of the Department or local health department. The homeowner of an ATU may conduct the inspection and maintenance as defined within the Act, but the inspection and maintenance shall be performed per the manufacturer's requirements to assure proper operation. If the required inspections and maintenance are not performed, the system is in violation of the Act and this Part.

C) Sand filters and waste stabilization ponds with surface discharges require an evaluation to determine whether the tanks and all of the compartments of the private sewage disposal system have layers of scum and settled solids greater than 33% of the liquid capacity of the tank. If the layers of scum and settled solids are greater than 33%, the tanks and compartments shall be pumped out and maintenance shall be performed. The system shall be evaluated a minimum of once every year. The system may be evaluated by a Private Sewage Disposal System Installation Contractor, a licensed Environmental Health Practitioner, an Illinois licensed Professional Engineer, a representative of the Department, or an agent of the Department or local health department. Depending on the system's use, the tanks and compartments may need to be evaluated and pumped more frequently. The homeowner of a sand filter or waste stabilization pond may conduct the inspection and maintenance as defined within the Act, but the inspection and maintenance shall be performed per the requirements of this Part to assure proper operation.

D) All other private sewage disposal systems that are not listed in subsection (q)(3)(A) through (C) shall be maintained in accordance with the manufacturer's specifications or based on a maintenance interval approved by the Department.

E) The owner of a private sewage disposal system may submit an alternative maintenance interval to the Department for approval. The Department will evaluate the alternative interval on a case-by-case basis. The approval is not transferable from owner to owner. Change in ownership or use of the private sewage disposal system will void the approval.

4) A failure to properly operate, maintain and have routine service conducted on a private sewage disposal system is a violation of the Act and this Part.

À moins de modalités différentes spécifiquement prévues à la certification d'un produit, les technologies de traitement doivent faire l'objet d'un entretien selon un plan de service initial de 4 entretiens dans les deux premières années de mise en service. Un service d'entretien continu doit ensuite être rendu disponible pour le propriétaire mais son adhésion n'apparait pas être imposée par le règlement.

> ***Section 905.100 Aerobic Treatment Plants and NSF International/ANSI Standard 40 Wastewater Treatment Systems […]***
>
> ***g) Service. Devices falling within the scope of NSF International/ANSI Standard 40 require periodic maintenance to achieve performance consistent with demonstrated capabilities. Implicit in NSF International/ANSI Standard 40 is the recognition that assured professional service is imperative. NSF International/ANSI Standard 40 and this Part require a 2-year service policy to be provided as part of the initial service agreement. (Note: The following initial service policy includes items not included in the NSF International/ANSI Standard 40 service policy.)***
>
> ***1) Initial service policy. The private sewage disposal installation contractor, through the manufacturer or the distributor of the aerobic treatment unit, shall furnish a 2-year initial service policy to the purchaser. This policy shall provide for:***
>
> ***A) Four inspection/service calls, at least one every 6 months, that include inspection, adjustment and servicing of the mechanical and the applicable component parts to ensure proper function;***
>
> ***B) An effluent quality inspection consisting of a visual check for color, turbidity, scum overflow, and an examination for odors;***
>
> ***C) Reporting to the owner immediately any improper operation that cannot be corrected at the time of the inspection or service call. This shall be followed by a written report to the owner that includes the date by which the condition will be corrected.***
>
> ***2) Continuing service policy. Each manufacturer shall make available for purchase by the owner a continuing service policy with terms equal to the initial service policy.***

Outre, les dispositions ci-dessus, le règlement n'impose pas de mesure de contrôle obligatoire tel qu'un relevé sanitaire, ou un échantillonnage particulier.

2.10 RESTRICTIONS : Restrictions quant à la localisation des installations septiques

Le règlement prévoit des modalités différentes selon le type de composante (étanche ou non étanche) d'une installation septique. De plus, les distances varient aussi selon le type de système de traitement. Un dégagement est prévu entre une composante et une piscine creusée et pour le point de rejet de surface d'un système. Le règlement n'impose pas de distances des arbres et ne définit pas la distance à respecter des puits d'eau potable. Cet élément relève au règlement relatif à l'aménagement des puits. Selon ce règlement, la distance varie entre 50 et 100 pieds d'un puits selon que la composante est étanche ou non étanche.

> ***Section 905.APPENDIX A Illustrations and Exhibits***
>
> ***Section 905.ILLUSTRATION D Location of Components of Private Sewage Disposal Systems***

MINIMUM DISTANCE ALLOWABLE FROM [1,2] COMPONENT PART OF SYSTEM						
	Cistern Well, or Suction Line from Pump To Well (FEET)	***Water Supply Line[3] Pressure (FEET)***	***Lake, Stream In ground Swimming Pool or Other Body of Water (FEET)***	***Property Dwelling (FEET)***	***Property Line[4] (FEET)***	***Artificial Drain (FEET)***
Building Sewer [5]	***50***	***10***	***25***	***-***	***-***	***-***
Septic Tank or Aerobic Treatment Plant	***50***	***10[9]***	***25***	***5***	***5***	***-***
Distribution Box	***75***	***10***	***25***	***10***	***5***	***-***
Subsurface Seepage System	***75***	***25***	***25***	***10***	***5***	***10***
Sand Filter	***75***	***25***	***15***	***10***	***5***	***10***
Privy	***75***	***25***	***25***	***20***	***5***	***10***
Waste Stabilization Pond	***75***	***25***	***25***	***20***	***5***	***10***
Surface Discharge Effluent Line	***50***	***10***	***-***	***-***	***5***	***-***

Effluent Receiving Trench	***75***	***25***	***15***	***10***	***5***	***10***
Treated Effluent Discharge Point[6]	***50***	***10***	***-***	***20***	***25***	***25***
Class V Injection Wells[7]	***200[8]***	***25***	***25***	***10***	***5***	***10***

[1] These distances have been determined for use in clay, silt and loam soils only.

The minimum distances required for use in sand or other types of soil shall be determined

for the proposed private sewage disposal system and approved by the Department.

Approval will be given if the Department determines that the soil will provide treatment of the sewage.

[2] For separation distances to closed loop wells, see 77 Ill. Adm. Code 920.180.

[3] See Section 905.20(d) for additional details on water line and sewer separation.

[4] If a common property is used, the boundary of the common property shall be used.

[5] The building sewer or surface discharge effluent line may be located to within 10 feet

of a well or suction line from the pump to the well when cast iron pipe with mechanical

joints or Schedule 40 PVC pipe with watertight joints is used for the building sewer or

surface discharge effluent line.

[6] Any surface discharging system installed, repaired or renovated after January 1, 2014.

[7] Class V Injection Wells are defined in Illinois Pollution Control Board rules.

They are typically a shallow well used to place fluids directly below the land surface.

See, e.g., 35 Ill. Adm. Code 704.105. 704.106 and 704.280.

[8] A lesser separation distance may be obtained with approval or a waiver from IEPA.

[9]There shall be 25 feet separation from public water supply water mains and water service lines.

The terms public water supply, water main and water service line shall have the same meaning

as in the Illinois Pollution Control Board's Public Water Supplies rules.

See, e.g., 35 Ill. Adm. Code 653.118 and 653.119.

2.11 MILIEUX SENSIBLES :

Le règlement ne prévoit pas de mesure de protection spécifique aux milieux boisés. Les systèmes hors-sol sont interdits dans les zones inondables mais aucun autre type de système n'apparait y être restreint. La construction sur des sites en pente forte n'apparait pas non plus restreinte dans la mesure où le type de système y est adapté et permet une application adéquate et sécuritaire malgré la pente. Les plans d'eau ne font pas non plus l'objet de mesures particulières au-delà de celles déjà énoncées relativement aux rejets de surface et aux distances séparatrices. Le règlement ne définit pas non plus de mesures particulières à adopter pour certains milieux plus sensibles à la contamination.

2.12 TOILETTES : Toilettes à compost, toilettes chimiques et toilettes à incinération

Les toilettes à compost et les toilettes à incinération sont autorisées et encadrées à l'article 905.130 du Code. En ce qui concerne les toilettes chimiques, le règlement mentionne qu'elles sont autorisées (article 905.30) mais ne définit pas un encadrement spécifique à leur utilisation.

> ***Section 905.30 Approved Private Sewage Disposal Systems***
>
> ***a) The following systems are approved for private sewage disposal when designed, constructed, operated, and maintained in accordance with this Part: […]***
>
> ***3) Privies, chemical toilets, re-circulating toilets, incinerator toilets or compost toilets.***

> ***Section 905.130 Human Waste Disposal***
>
> ***a) General. Privies, portable toilets, recirculation toilets, incinerator toilets and compost toilets are approved for private sewage disposal of human wastes. Other domestic wastes shall be disposed of in a conventional system (see Section 905.30); however, the size of all components, as designed in accordance with Appendix A, Illustration A, may be reduced 25 percent (except that septic tanks may not be smaller than 750 gallons). Note: Compost toilets may be used to dispose of other organic domestic wastes. [...]***
>
> ***f) Incinerator Toilets***
>
> ***1) Incinerator toilets shall be designed and operated to provide complete incineration of the contents without production of odors. The owner of an incinerator toilet shall maintain the toilet and dispose of the contents in accordance with Section 905.170(e).***
>
> ***2) Incinerator toilets shall comply with the requirements of NSF International/ANSI Standard 41 and shall bear the NSF International or the approved certification agency seal.***
>
> ***g) Compost Toilets***
>
> ***1) Compost toilets shall be designed in accordance with the manufacturer's recommendations to serve the anticipated number of persons. The owner of a compost toilet shall maintain the toilet and dispose of the contents in accordance with Section 905.170.***
>
> ***2) Compost toilets shall comply with the requirements of NSF International/ANSI Standard 41 and shall bear the NSF International or the approved certification agency seal.***

2.13 PERMÉABILITÉ DU SOL :

Les sols dont le temps de percolation est de plus de 60 min/pouce (23 min/cm) et de moins de 7 min/pouces (3 min/cm) sont identifiés comme étant impropres à l'implantation d'un système de traitement par infiltration « subsurface seepage systems » (Code, Appendix A, Illustration H).

Dans ces situations, le recours aux systèmes avec rejet en surface (filtres à sable classique, étangs aérés ou systèmes de traitement avancés) ou à des systèmes hors-sol sont les solutions privilégiées. Les systèmes hors-sol peuvent être surdimensionnés en utilisant du matériel de remblai de manière à s'assurer que la surface, ainsi recouverte, prévienne les résurgences d'eaux usées non traitées.

> ***PART 906 PRIVATE SEWAGE MOUND CODE***
>
> ***Section 906.50 Mound Design***
>
> ***f) Basal Area***
>
> ***1) The basal area is the natural soil-fill interface of the mound. The basal area required shall be dependent upon the soil and site conditions. For level sites, the total basal area beneath the mound can be used. For sloping sites the only basal area which may be considered for design is the area beneath and downslope of the bed or trenches (see Appendix A, Exhibit C). The percolation rate of the natural soil shall determine the mound area required. For the percolation rates shown the following design loading rates shall be used:***
>
> ***A) 60 min – 1.2 gal/ft^2/day***
>
> ***B) 180 min – .74 gal/ft^2/day***
>
> ***C) 360 min – .24 gal/ft^2/day***
>
> ***2) If sufficient basal area is not available for the given design and site conditions, additional fill shall be used to make the mound wider for a level site or the fill used to extend the downslope width on a slope site until sufficient area is available.***

Le recours aux fosses de rétention est identifié comme une solution de dernier recours ou réservée à régler des situations particulières (Code, article 905.140).

> ***Section 905.140 Holding Tanks***
>
> ***a) General. Holding tanks are approved for private sewage disposal only under the following circumstances:***
>
> ***1) Where site conditions, such as type of soil, water table, terrain, lack of size or other conditions, are not suitable to achieve compliance with this Part for installing a private sewage disposal system.***

2) As a temporary measure while awaiting the availability of a municipal sewer extension. This temporary condition shall not exceed one year in length.

3) As a sanitary dumping station to receive the discharge from holding facilities on recreational vehicles.

4) To receive the discharge from fixtures or drains that receive waste products such as automotive grease, oils, solvents and chemicals that are not allowed to be discharged into a private sewage disposal system. These waste products shall be handled according to rules for the disposal of oil, gas and grease promulgated under the Environmental Protection Act, or according to 35 Ill. Adm. Code Subtitle G, or shall be taken to an oil and gas reclamation center. (Also see the Illinois Plumbing Code.) Holding tanks to be used as described in this Section shall be Underwriters Laboratories, Inc. certified, constructed of materials approved for gas and oil interceptors as specified in 77 Ill. Adm. Code 890.520, and properly anchored to prevent flotation.

2.14 FORTES CONTRAINTES : Solutions pour les sites à fortes contraintes

Les documents consultés ne traitement pas précisément de solution pour des situations problématiques en zone inondable ou en rive et littoral. Par contre, tel que mentionné à la section précédente, le règlement prévoit certaines alternatives pour des conditions de sol imperméable. Le règlement permet aussi la mise en place d'un système de traitement par infiltration de type hors sol « Raised Filter Beds », précédé d'un système de traitement avancé (système certifié NSF40).

> ***Section 905.95 Illinois Raised Filter Beds***
>
> ***j) The mantle area shall be at least 12 inches deep. If the maximum high groundwater table is less than 6 inches from the bottom of the filter bed, additional torpedo sand shall be used to increase the isolation distance between the bottom of the filter bed and the high groundwater table to at least 6 inches. Other separation distances (e.g., well, property line) shall be measured from the toe of the filter bed.***

Ultimement, si des situations restent inconciliables avec l'application intégrale du règlement, celui-ci permet un mécanisme de dérogation « variance » pour palier aux situations de sites à fortes contraintes.

> ***Section 905.20 General Requirements […]***
>
> ***l) Variances. If conditions exist at a proposed installation that make compliance with the requirements of this Part impractical or impossible, a variance may be requested by submitting to the Illinois Department of Public Health, Division of Environmental Health, or appropriate local authority a written proposal that is to be used in lieu of compliance with this Part. The written request shall include pertinent data to support the proposal, such as soil conditions, water table elevations, drainage patterns and distances to water supplies. The capability of the system to comply with the intent of this Part will be the basis for approval or denial of the variances. The Department or local authority will notify the applicant in writing of its decision to either grant or deny the variance. Construction shall not begin before a variance is requested and approved.***

2.15 ÉTUDES : Études préalables et mise aux normes

Selon le Code, une demande de permis doit être accompagnée des informations et documents listés à l'article 905.190 ci-dessous.

> ***Section 905.190 Installation Approval***
>
> ***a) Plan approval shall be obtained from the Department or local authority prior to beginning any construction of a new private sewage disposal system. A new private sewage disposal system shall consist of, but not necessarily be limited to, the following:***
>
> ***1) A system where a septic tank is replaced or where a major component of the system is removed or added. Examples of major components would be the replacement or addition of an aeration unit, re-circulating sand filter, sand filter, seepage pit, seepage bed or waste stabilization pond.***
>
> ***2) A system where the size of the absorption field is increased by 25% or more or where 25% or more of the existing absorption field is removed and replaced with new piping and backfill material.***
>
> ***b) Requests for approval shall be submitted on the forms provided by the Department or local authority. At a minimum, the necessary information that shall be submitted to the Department or local authority for approval shall consist of:***
>
> ***1) Plans or drawings to scale indicating lot size with dimensions showing the location of the system and type of system to be constructed; the dimensions and the length of lateral pipe to be installed, showing type of backfill material if applicable; distances to water lines, water wells, potable water storage tanks and buildings; site elevations and ground surface elevations sufficient to determine the elevation of system components and the slope of the ground surface; location of sanitary sewer, if available, within 300 feet of the property; and typical cross-section of the system.***
>
> ***2) Number of bedrooms or design volume.***
>
> ***3) Soil investigation results or percolation test results and the separation distance from the trench bottom to a limiting layer. The private sewage disposal system installation contractor or homeowner shall submit information with the plan approval application or local authority permit application that a limiting layer does not exist within the distances provided in Section 905.60(a)(7).***
>
> ***4) Owner's name and address.***
>
> ***5) Name and signature of applicant.***
>
> ***c) The applicant's signature serves as written acknowledgement that the property owners are aware of and accept the responsibility to service and maintain the private sewage disposal system in accordance with the Private***

Sewage Disposal Licensing Act and this Part. If the owner of the site is a developer or contractor, he or she shall notify the purchaser and the Department or the Department's agent of the transfer of ownership and responsibility for maintenance.

d) Persons who construct, install, repair or modify a private sewage disposal system shall notify the Department or local authority at least 48 hours prior to commencement of the work.

e) If any person constructs, installs, repairs or modifies a private sewage disposal system without complying with the requirements of subsections (a) through (d) of this Section and backfills any portion of the system or covers any portion of the system with earth, cinders, gravel, shale or any other material that will prevent the Department or local authority from viewing the system to determine compliance with this Part, the property owner or private sewage disposal installation contractor shall uncover the backfilled or covered portions of the system.

f) Contractor Responsibility. The private sewage disposal installation contractor is responsible for percolation test results and the sewage disposal system that is designed and constructed using those results. Acceptance of percolation tests from other sources does not relieve the installation contractor from responsibility. The private sewage disposal system installation contractor is also responsible for the following:

1) Constructing, installing, repairing, modifying, or maintaining the private sewage disposal system in accordance with this Part;

2) Providing the results of soil classification information or percolation tests used to design a private sewage disposal system to the property owner and retaining copies of this information for at least 5 years;

3) Providing service to aerobic treatment plants at least equal to Section 905.100(g); and

4) Assuring compliance with all codes that may apply to the system, including the National Electrical Code.

g) Soil Classifier Responsibility. The soil classifier or Illinois licensed professional engineer shall be responsible for the accuracy of the information from soil investigations used to design private sewage disposal systems.

Le règlement ne contient pas d'obligation relative à l'ajout de chambre, l'augmentation de capacité d'exploitation ou le changement de vocation d'un bâtiment. Ceci-dit, nous comprenons que le système doit être utilisé selon les critères de conception d'origine. D'autre part, un

changement de situation (réparation ou remplacement complet ou partiel) entraine la mise aux normes du système (Code, article 905.20, p)).

> ***p) Whenever an existing private sewage disposal system is repaired or replaced, that portion of the system being repaired or replaced shall comply with all of the requirements of this Part.***

2.16 AUTRES :

Éléments du Q-2, r.22 qui sont couverts par le territoire visé

Définitions	X
Hiérarchie du choix d'un système	
Obligation de vidange des fosses septiques	
Méthodes pour établir la perméabilité du sol	X
Plages de perméabilité	X
Référence aux normes BNQ/NSF	X
Normes de construction des fosses construites sur place	X
Préfiltre	X
Norme spécifique au déboisement (élément épurateur classique)	
Conduite d'amenée, raccordements et ventilation	X
Champ d'application du Règlement/type d'eau	X
Prohibition de rejeter des eaux usées	X
Interdiction d'utiliser certains produits (désinfection de ces eaux usées)	X
Conditions d'émission des permis (plan, études, etc.)	X
Implication d'un professionnel compétent pour la conception (Ordre professionnels)	X
Désaffectation des systèmes	X
Gestion des boues et des autres résidus	X
Cheminement des eaux et des effluents	
Normes de localisation pour les systèmes étanches et les systèmes non étanches	X
Normes techniques à respecter (matériaux, dimensions, etc.)	X
Conditions d'implantation des systèmes (pente, perméabilité, épaisseur de sol naturel, etc.)	X
Obligation d'entretien et/ou de maintenir un contrat d'entretien des systèmes certifiés	X
Normes de rejet des systèmes	X
Systèmes spécifiquement pour des résidences/bâtiments existants	
Toilettes à compost	X
Cabinet/toilettes sèches	X
Solutions si ségrégation des eaux (toilettes vs eaux ménagères) (ex : vidange périodique)	
Déclencheurs/droits acquis pour la mise aux normes de systèmes existants	
Dispositions encadrant les rejets au fossé/cours d'eau	X
Déphosphatation	
Désinfection	X
Méthodes de prélèvement et d'analyse des rejets des systèmes	X
Définit la responsabilité des municipalités pour l'application du Règlement	
Amendes/infractions	X
Dispositions applicables à des territoires particuliers (Basse-Côte-Nord Iles-de-la-Madeleine, etc.)	

Éléments couverts par le territoire visé et qui ne sont pas traités dans le Q-2, r.22

- Certification des installateurs
- Obligation d'avoir une fosse de rétention ou une fosse septique surdimensionnée lorsqu'une résidence à un broyeur à ordure.
- Inspection avant recouvrement obligatoire
- Procédure de dérogation
- Utilisation des filtres à sable à recirculation, étangs aérés, filtre à sable hors-sol partiellement excavé
- Encadrement des postes de pompage
- Encadrement des toilettes portatives

SOURCES Illinois :

1. *Illinois Administrative Code,Title 77: Public Health, Chapter I: Department Of Public Health, Subchapter R: Water And Sewage, Part 906 Private Sewage Mound Code, 1989*
2. *Illinois Administrative Code, Title 77: Public Health, Chapter 1: Department of Public Health, Subchapter: Water and Sewage Part 905 Private Sewage Disposal Code, 2013*
3. *Illinois General Assembly, Professions, Occupations, And Business Operations (225 Ilcs 225/), Private Sewage Disposal Licensing Act, 2010*
4. *Site internet official du Illinois Department of Public Health, http://www.dph.illinois.gov/topics-services/environmental-health-protection/private-sewage-disposal*

3.0 IOWA

3.1 ENCADREMENT :

C'est l'«Iowa Department of Natural Ressources» qui réglemente le domaine des eaux usées dans l'état de l'Iowa. Ils ont la responsabilité d'administrer la réglementation en collaboration avec les autorités locales de la santé. Le règlement applicable est :

- Iowa Administrative Code - Chapter 69 Private Sewage Disposal Systems, en vigueur depuis 1983 et mis à jour le 15 août 2012, ci-après, le règlement.

> ***Private Septic Systems[3]***
>
> ***In Iowa, local boards of health have primary responsibility for regulation of sewer systems serving 4 homes or fewer or less than 15 people, while the Iowa DNR has primary responsibility for larger (public) systems. In conducting their activities, counties must comply with the minimum state standards developed by the Iowa DNR. If counties fail to adopt or enforce state standards for smaller systems, the Iowa DNR has concurrent authority to require compliance by individuals and the counties with the minimum standards for onsite wastewater treatment and disposal.***
>
> ***The Iowa DNR standards specify sitting and construction requirements relative to the primary and secondary treatment portions of the sewage disposal systems, minimum depth to groundwater, minimum separation distances to potable water sources, and maximum percolation rates for soils. The Iowa DNR standards are primarily a prescriptive code giving design criteria for each alternative type of secondary treatment system permitted. Counties have the authority to allow alternative or innovative performance based systems.***

Les installations traitant des débits journaliers excédant 1500 gallons/j sont considérées comme des installations publiques sous la juridiction exclusive du département des ressources naturelles (CHAPTER 64 WASTEWATER CONSTRUCTION AND OPERATION PERMITS) visant l'obtention d'un « certificat d'autorisation »

Le règlement actuel constitue une version amendée du règlement de base de 1983. Une procédure de refonte complète est à l'étude actuellement.

[3] https://www.iowadnr.gov/Environmental-Protection/Water-Quality/Private-Septic-Systems

69.1(2) Definitions.

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

3.2 TYPE D'EAU : Types d'eau visés par l'encadrement

Le règlement vise la gestion des eaux usées de nature domestique jusqu'à un débit journalier de 1500 gallons, sans distinction du type de bâtiment les générant autrement que dans la détermination du débit journalier.

> ***69.1(2) Definitions.***
>
> ***"Domestic sewage" or "domestic wastewater" means the water-carried waste products from residences, public buildings, institutions, or other buildings, including bodily discharges from human beings together with groundwater infiltration and surface water as may be present.***

> ***"Private sewage disposal system" means a system which provides for the treatment or disposal of domestic sewage from four or fewer dwelling units or the equivalent of less than 16 individuals on a continuing basis, including domestic waste, whether residential or nonresidential, but not including industrial waste of any flow rate except as provided for in 567—68.11(455B). "Private sewage disposal system" includes, but is not limited to, septic tanks, holding tanks for waste, chemical toilets, impervious vault toilets and portable toilets.***

> ***69.8(1) General requirements.***
>
> ***c. Determination of flow rates. Residential wastewater flows are based on 150 gallons per bedroom per day. For wastewater flow rates for nonresidential and commercial domestic waste applications serving the equivalent of fewer than 16 individuals on a continuing basis, refer to Appendix A.***

Le règlement ne fait pas de distinction dans la gestion des types d'eaux, par exemple des eaux à charges élevées. Il aborde de façon sommaire l'installation de pièges à matière grasse pour les restaurants. On trouve également une recommandation générale d'utiliser un prétraitement dans le cas de charges élevées mais sans quantifier d'objectif à atteindre.

> ***69.7(4) Grease interceptors.***
>
> ***a. Applicability. Grease interceptors shall be provided for kitchen flows at restaurants, nursing homes, schools, hospitals and other facilities from which grease can be expected to be discharged.***
>
> ***b. Installation. Grease interceptors shall be installed on a separate building sewer serving kitchen flows into which the grease will be discharged. The discharge from the grease interceptor must flow to a properly designed septic tank or to a building sewer and then to the septic tank.***

De plus, le règlement prohibe certains contaminants pouvant être rejetés dans une installation septique.

> ***69.8(455B) Primary treatment—septic tanks.***
>
> ***69.8(1) General requirements.***
>
> ***d. Prohibited wastes. Septic tanks shall not be used for the disposal of chemical wastes or grease in quantities which might be detrimental to the bacterial action in the tank or for the disposal of drainage from roof drains, foundation drains, or area drains.***

3.3 DENSITÉ MAXIMALE : Densité maximale des installations septiques

Le règlement ne prévoit pas de disposition relative à la notion de la densité des installations septiques. Il ne contient pas non plus de disposition sur l'effet cumulatif des installations sur l'environnement; même dans le cas de rejets de surface.

3.4 REJETS : Rejets en surface

L'état de l'Iowa permet les rejets de surface. Selon l'article 69.4 du règlement, ceux-ci sont encadrés par l'émission d'un permis « General Permit #4 ». Il n'y a pas de distinction pour les résidences neuves ou existantes. Le libellé intégral de cette procédure d'approbation est joint en annexe[4].

> ***69.4(455B) Requirements when effluent is discharged into surface water. All discharges from private sewage disposal systems which are discharged into, or have the potential to reach, any designated waters of the state or subsurface drainage tile shall be treated in a manner that will conform with the requirements of NPDES General Permit No. 4 issued by the department of natural resources, as referenced in 567—Chapter 64. Prior to the use of any system discharging to designated waters of the state or a subsurface drainage tile, a Notice of Intent to be covered by NPDES General Permit No. 4 shall be submitted to the department. Systems covered by this permit must meet all applicable requirements listed in the permit, including effluent sampling and monitoring.***

Selon le la procédure « General Permit #4 », l'analyse tient compte des paramètres suivants :

> ***General permit #4***
>
> ***A. Compliance.***
>
> ***1. The system owner shall be responsible for assuring that compliance with all the permit terms and conditions is met.***
>
> ***B. Effluent Sampling by Qualified Samplers.***
>
> ***1. The owner is responsible to have the private sewage disposal system sampled to ensure compliance with this general permit. Only a "qualified sampler" shall conduct effluent sampling for compliance monitoring. "Qualified samplers" shall be one of the following:***
>
> ***1) A county or city environmental health staff person;***
>
> ***2) An Iowa-certified wastewater treatment operator; or***
>
> ***3) An individual who has received training approved by the Department to conduct effluent sampling.***
>
> ***C. Sampling Frequency and Testing Parameters.***

[4] Iowa Department of Natural Resources, National Pollutant Discharge Elimination System (NPDES), General Permit No. 4 for Discharge from Private Sewage Disposal Systems, 2018, page 5

All permitted discharging private sewage disposal systems shall be sampled and tested no less than twice a year at six-month intervals for Carbonaceous Biochemical Oxygen Demand (CBOD5) and Escherichia coli (E. coli), and once a year for total suspended solids (TSS).

D. Effluent quality limits are as follows:

Effluents Discharging To	E. coli cfu/100 mL	CBOD5 mg/L	TSS mg/L
Class "A1", "A3" waters	235	25	25
Class "A2" waters	2880	25	25

Toujours selon cette même procédure spéciale d'autorisation, l'analyse d'effluent est obligatoire et les modalités en sont prévues au permis encadrant l'approbation du système.

General permit #4

Part III. Compliance Requirements

A. Compliance.

1. The system owner shall be responsible for assuring that compliance with all the permit terms and conditions is met.

B. Effluent Sampling by Qualified Samplers.

1. The owner is responsible to have the private sewage disposal system sampled to ensure compliance with this general permit. Only a "qualified sampler" shall conduct effluent sampling for compliance monitoring. "Qualified samplers" shall be one of the following:

1) A county or city environmental health staff person;

2) An Iowa-certified wastewater treatment operator; or

3) An individual who has received training approved by the Department to conduct effluent sampling

3.5 CONTAMINANTS : Contaminants encadrés

Le règlement encadre les concentrations en DBO5 et en matière en suspension uniquement. Pourtant, le règlement ne précise pas d'exigence de suivi de ces contaminants.

Selon la table IIIa du règlement, l'effluent des fosses septiques doit se situer entre 30 et 220 mg/l de DBO5 et entre 30 et 150 mg/l de matières en suspension.

Le règlement requiert l'installation d'un traitement avancé en amont de certaines gammes de systèmes d'infiltration dans le sol. Selon la table IIIa du règlement, les paramètres visés à l'effluent du système avancé sont de moins de 30 mg/l de DBO5 et de moins de 30 mg/l de matières en suspension.

La section précédente abordait d'autres façons d'encadrer les contaminants émis dans le cas de rejets de surface. Toutefois, ces dispositions relèvent du « General Permit #4 ».

3.6 CERTIFICATION : Entité responsable d'effectuer la certification des différents intervenants et des technologies

Le règlement prévoit une obligation de faire inspecter les installations septiques au moment d'une transaction immobilière. Les personnes qui souhaitent réaliser de telles inspections doivent être certifiées selon l'article 69.2 ci-dessous.

> ***69.2(2) Certified time of transfer inspectors. Inspections shall be conducted by an inspector certified by the department. In order to be a certified time of transfer inspector, an individual shall have met the experience requirements, have successfully completed the inspection course and examination, and have been issued a current certificate by the department in accordance with this rule.***
>
> ***a. Experience requirements. In order to be certified by taking the inspection course and examination only, an individual must have at least two years' experience in the operation, installation, inspection, design or maintenance of private sewage disposal systems. Individuals lacking this experience must complete additional coursework before attending the inspection course with testing. The additional courses shall include, but not be limited to, "Onsite Basics 101" and "Alternative Systems" offered by the Onsite Wastewater Training Center of Iowa or courses determined by the department to be equivalent.***
>
> ***b. Examination application. A person wishing to take the examination necessary to become a certified inspector shall complete the Certified Time of Transfer Inspector Application, Form 542-0192. A listing of dates and locations of examinations is available from the department upon request. The application form requires the applicant to indicate pertinent educational background, training and past experience in providing private sewage disposal services. The completed application and the application fee shall be sent to Time of Transfer Inspector Certification, Iowa Department of Natural Resources, 502 E. 9th Street, Des Moines, Iowa 50319-0034. An application for examination must be received by the department at least 30 days prior to the date of the examination.***
>
> ***(...)***

On ne retrouve pas de référence précise à différents standards internationaux (ex : NSF40) pour la certification des fabricants ou de technologies de traitement. Le règlement réfère seulement, à l'article 69.21 a une notion générale de certification « approved standards ». De plus, le règlement prévoit une procédure d'autorisation au cas par cas par les autorités locales.

> ***69.21(455B) Experimental private sewage disposal systems.***
>
> ***69.21(1) Design requirements. Experimental systems are to be designed and operated in accordance with approved standards and operating procedures established by individual administrative authorities.***

> ***a. Plans and specifications, meeting all applicable rule requirements, should be prepared and submitted to the administrative authorities by a licensed professional engineer. Included with the engineering submittal should be adequate supporting data relating to the effectiveness of the proposed system.***

Il n'y a pas d'exigence relative aux personnes responsables de la caractérisation des sols puisque cette démarche relève encore des autorités locales. D'autre part, un règlement parallèle, le « IOWA ADMINISTRATIVE CODE (IAC) 567 CHAPTER 68, COMMERCIAL SEPTIC TANK CLEANERS » encadre la procédure de certification des compagnies de vidanges, les équipements et mesure de précautions requises, les modalités de disposition des boues, etc.

3.7 CAPACITÉ : Capacité des fosses septiques

La capacité effective minimale des fosses septiques est prescrite à l'article 69.8. La capacité des fosses tient compte du débit journalier des bâtiments. Le règlement permet d'additionner plusieurs fosses pour obtenir le volume minimal requis.

> ***69.8(455B) Primary treatment—septic tanks.***
>
> ***69.8(1) General requirements.***
>
> ***a. Minimum capacity.***
>
> ***The minimum liquid-holding capacity shall be as specified in the following table (capacity may be obtained by using one or more tanks):***
>
> | | |
> |---|---|
> | ***Up to and including 3-bedroom homes*** | ***1,250 gal.*** |
> | ***4-bedroom homes*** | ***1,500 gal.*** |
> | ***5-bedroom homes*** | ***1,750 gal.*** |
> | ***6-bedroom homes*** | ***2,000 gal.*** |
>
> ***b. Other domestic waste systems. In the event that an installation serves more than a 6-bedroom home or its equivalent, or serves a facility other than a house and serves the equivalent of fewer than 16 individuals on a continuing basis, approval of septic tank capacity and design must be obtained from the administrative authority. Minimum septic tank liquid-holding capacity shall be two times the estimated daily sewage flow.***
>
> ***c. Determination of flow rates. Residential wastewater flows are based on 150 gallons per bedroom per day. For wastewater flow rates for nonresidential and commercial domestic waste applications serving the equivalent of fewer than 16 individuals on a continuing basis, refer to Appendix A.***

3.8 VIDANGE : Encadrement de la vidange des fosses septiques

Le règlement n'aborde pas la question de la vidange des fosses septiques. Nos recherches démontrent toutefois qu'il est recommandé, par certains fournisseurs de l'Iowa et par le « Iowa Department of Natural Ressources » de vidanger une fosse septique aux 3 à 5 ans. Il s'agit avant tout d'une recommandation de bonne pratique et non une exigence légale.

D'autre part, tel que mentionné précédemment, un autre règlement, le « IOWA ADMINISTRATIVE CODE (IAC) 567 CHAPTER 68, COMMERCIAL SEPTIC TANK CLEANERS » encadre les compagnies de vidange des fosses septiques. Ce règlement traite de la procédure de certification des compagnies, des équipements, des mesures de précaution requises, des modalités de disposition des boues, etc. Ceci-dit, ce règlement ne prévoit pas de modalité quant à la fréquence de vidange, ni la méthode pour la déterminer, ni des adaptations à faire selon le caractère annuel ou saisonnier de l'occupation d'un bâtiment.

Ce règlement prévoit que les compagnies de vidanges sont tenues de conserver un registre de leurs interventions pour les fournir sur demande.

> ***567—68.6(455B) Licensee's obligations.***
>
> ***68.6(3) Records. The licensee shall maintain records of private sewage disposal systems cleaned and the location, method of septage disposal, and volume of septage disposed of for each trip. Such records shall be maintained for a period of five years and shall be made readily available upon request by the administrative authority.***

3.9 SUIVI : Nécessité de faire le suivi des installations septiques

Tel que mentionné au point 6, le règlement exige de faire le suivi des installations septiques à chaque transfert de propriété. Cette inspection doit-être réalisée par un professionnel certifié.

> ***567—69.2(455B) Time of transfer inspections.***
>
> ***69.2(1) Inspections required. Prior to any transfer of ownership of a building where a person resides, congregates, or is employed that is served by a private sewage disposal system, the sewage disposal system serving the building shall be inspected. In the event that weather or other temporary physical conditions prevent the certified inspection from being conducted, the buyer shall execute and submit a binding agreement with the county board of health to conduct a certified inspection of the private sewage disposal system at the earliest practicable time and to be responsible for any required modifications to the private sewage disposal system as identified by the certified inspection. In the event that all parties agree the existing private sewage disposal system will not pass inspection, the buyer may forego the inspection and execute a binding agreement with the local board of health to install a private sewage disposal system compliant with this rule at a time specified by the administrative authority. The inspection requirement applies to all types of ownership transfers not specifically exempted, including when a seller-financed real estate contract is signed.***

Également, quelques types de systèmes nécessitent un suivi annuel, notamment les systèmes hors-sol et alternatifs.

> ***69.5(455B) Requirements when effluent is discharged above the ground surface.***
>
> ***69.5(1) All private sewage disposal systems that discharge above the ground surface shall be annually inspected to ensure proper operation.***
>
> ***69.5(2) Private sewage disposal systems that require a maintenance contract shall be inspected by a manufacturer's certified technician.***
>
> ***69.5(3) Private sewage disposal systems that do not require a maintenance contract shall be visually inspected by a person with knowledge of the system for any malfunction and shall have the septic tank opened, inspected, and pumped if needed. A record of the inspection and any tank pumping shall be maintained and be made available to the administrative authority upon request.***

L'exemple suivant illustre le libellé concernant les systèmes de filtration à base de tourbe.

> ***69.13(6) Peat moss biofilter systems. General requirements for individual peat moss biofilter systems are as follows:***
>
> ***d. Maintenance contract. Prior to installation, a maintenance contract for the proper monitoring and servicing of the entire treatment system shall be established between the owner and a certified technician. A maintenance contract is required for the life of the system. All monitoring and servicing shall be performed by a manufacturer's certified technician. Manufacturers are responsible for ensuring that an adequate number of certified technicians are available to service all peat moss biofilters at the specified intervals. The certified technician shall perform the required maintenance and reporting to the owner and to the administrative authority. The certified technician shall also report any discontinuance of maintenance of the peat moss biofilter system to the administrative authority. Peat moss biofilter systems shall be inspected at least once annually by the certified technician. A copy of the maintenance contract shall be on file in the office of the administrative authority.***
>
> ***e. Effluent sampling. The discharge point of the filter shall be accessible for effluent sampling, or a sampling port shall be installed in the discharge line. All peat moss biofilter systems that have an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.***

Une procédure d'entretien équivalente est aussi obligatoire pour les systèmes de type « recirculating textile filter » et « aerobic treatment units » à l'exception que les systèmes aérés doivent être inspectés à tous les 6 mois.

La nécessité d'échantillonner ou non certains types de systèmes, la fréquence et la méthodologie sont laissés à la discrétion du département des ressources naturelles pouvant fixer les conditions appropriées à cet effet au moment de l'émission du permis.

On ne retrouve pas d'imposition réglementaire d'inventorier systématiquement les installations selon une certaine fréquence autrement que dans les situations de transfert de propriété.

3.10 RESTRICTIONS : Restrictions quant à la localisation des installations septiques

Les normes de localisation des installations septiques varient en fonction de leur étanchéité ou non. Les éléments réglementés relativement aux normes d'implantation sont indiqués au tableau ci-dessous.

> ***69.3(2) Minimum distances. All private sewage disposal systems shall be located in accordance with the minimum distances shown in Table I.***

Table I

Minimum Distance in Feet From	Closed Portion of Treatment System(1)	Open Portion of Treatment System(2)
Private water supply well	50	100
Shallow public water supply well(3)	200	400
Deep public water supply well(4)	100	200
Groundwater heat pump borehole	50	100
Lake or reservoir	50	100
Stream or pond	25	25
Edge of drainage ditch	10	10
Dwelling or other structure	10	10
Property lines (unless a mutual easement is signed and recorded)	10	10
Other type of subsurface treatment system	5	10
Water lines continually under pressure	10	10
Suction water lines	50	100
Foundation drains or subsurface tiles	10	10

(1) Includes septic tanks, aerobic treatment units, fully contained media filters and impervious vault toilets.
(2) Includes subsurface absorption systems, mound systems, intermittent sand filters, constructed wetlands, open bottom media filters and waste stabilization ponds.
(3) "Shallow well" means a well located and constructed in such a manner that there is not a continuous layer of low-permeability soil or rock (or equivalent retarding mechanism acceptable to the department) at least 5 feet thick, the top of which is located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.
(4) "Deep well" means a well located and constructed in such a manner that there is a continuous layer of low-permeability soil or rock at least 5 feet thick located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

Le règlement prévoit également des normes de localisation des conduites d'égout.

> ***567—69.7(455B) Building sewers.***
>
> ***69.7(1) Location and construction.***
>
> ***a. The types of construction and distances as shown in Table II shall be maintained for the protection of water supplies. The distances shall be considered minimum distances and shall be increased where possible to provide better protection.***

Table II

Sewer Construction	Distance in Feet From Well Water Supply	
	Private	Public
1. Schedule 40 plastic pipe (or SDR 26 or stronger) with approved-type joints or cast-iron soil pipe (extra heavy or centrifugally cast) with joints of preformed gaskets.	10	25
2. Sewer pipe installed to remain watertight and root-proof.	50	75

b. Under no circumstances shall a well suction line pass under a building sewer line.

3.11 MILIEUX SENSIBLES :

Le règlement ne restreint pas la construction d'installations septiques en fonction des pentes fortes d'un terrain. Ce dernier prévoit, par exemple, qu'une barrière hydraulique de 6 pieds doit être conservée entre des tranchées d'absorption mais recommande un espacement supplémentaire de 2 pieds pour chaque 5% supplémentaire de pente du terrain récepteur sans établir de maximum de pente.

Selon l'article 69.12, les systèmes par « drip irrigation » sont limités à des pentes de terrain récepteur de moins de 25%.

> ***69.12(455B) Drip irrigation.***
>
> ***69.12(1) General design.***
>
> ***[...]***
>
> ***c. Maximum hillside slope. Drip irrigation systems shall not be installed on slopes of more than 25 percent.***

Il n'y a pas de disposition particulière pour la protection des milieux sensibles tels que : lacs, cours d'eau, milieux humides, boisés, aquifère vulnérable, etc.

3.12 TOILETTES : Toilettes à compost, toilettes chimiques et toilettes à incinération

L'Iowa ne réglemente pas les toilettes à compost ou à incinération. Les toilettes alternatives réglementées sont les toilettes chimiques et les systèmes de type cabinets à fosse sèche « impervious vault toilets » raccordés à un réservoir de stockage. Les dispositions pertinentes sont décrites ci-dessous.

> ***69.17(455B) Requirements for impervious vault toilets. All impervious vault toilets shall comply with the following requirements:***
>
> ***69.17(1) Location. Impervious vault toilets shall be located in accordance with the distances given in Table I in rule 567—69.3(455B) for the closed portion of the treatment system.***
>
> ***69.17(2) Construction. The vault shall be constructed of reinforced, impervious concrete at least 4 inches thick. The superstructure including floor slab, seat, seat cover, riser and building shall comply with good design and construction practices to provide permanent, safe, sanitary facilities. The vault shall be provided with a cleanout opening fitted with a fly-tight cover.***
>
> ***69.17(3) Wastewater disposal. Wastewater from impervious vault toilets shall be disposed of at a public sewage treatment facility.***

> ***69.18(455B) Requirements for portable toilets. All portable toilets shall be designed to receive and retain the wastes deposited in them and shall be located and maintained in a manner that will prevent the creation of any nuisance condition. Wastewater from portable toilets shall be disposed of at a public sewage treatment facility.***

3.13 PERMÉABILITÉ DU SOL :

Il n'y a pas de plages de perméabilité clairement définies comme le prévoit le RETEURI. Le règlement de l'Iowa prévoit tout de même des temps de percolation en lien avec les divers types de systèmes de traitement par infiltration mais sans imposer de hiérarchie dans le choix de l'une d'elle.

Le règlement prévoit que l'effluent d'une fosse septique peut être rejeté dans des tranchées d'absorption lorsque le temps de percolation du sol se situe entre 1 min/pouce (0,4 min/cm) et 60 min/pouce (24 min/cm).

> ***69.9(2) Sizing requirements.***
>
> ***[…]***
>
> ***b. Unsuitable absorption. Conventional subsurface soil absorption trenches shall not be installed in soils that have a percolation rate less than 1 minute per inch or greater than 60 minutes per inch. Plans for an alternative method of wastewater treatment shall be submitted to the administrative authority for approval prior to construction.***

Les installations en lit d'absorption sont réservées aux sites ou l'espace est plus limité et où le temps de percolation se situe entre 1 et 30 min/pouce (0,40 min/cm à 12 min/cm).

Les tables de calcul prévoient la possibilité de dimensionner un système par infiltration pour traiter le rejet d'un système de traitement avancé « packaged treatment unit » jusqu'à un temps de percolation de 120 min/pouce (47 min/cm).

La seule alternative prévue au règlement en présence d'un sol imperméable dont le temps de percolation excède 120 min/pouce (47 min/cm) est celle d'un marais filtrant «constructed wetlands ». D'autre part, les rejets de surface sont encadrés par la procédure d'émission d'un permis spécifique de l'état (NPDES General Permit #4).

> ***69.15(455B) Constructed wetlands.***
>
> ***69.15(1) General site design.***
>
> ***a. Application. Constructed wetlands shall only be used where soil percolation rates at the site exceed 120 minutes per inch. Because of the higher maintenance requirements of constructed wetland systems, preference should be given to packed bed media filters, where conditions allow.***
>
> ***b. Effluent treatment. The effluent from a constructed wetland shall receive additional treatment through the use of intermittent sand filters of a magnitude prescribed in subrule 69.9(2) for pretreated effluent.***

c. Effluent sampling. All constructed wetland systems having an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

d. Additional specifications. Specifications given in this rule for constructed wetlands are minimal and may not be sufficient for all applications. Technical specifications are changing with experience and research. Other design information beyond the scope of this rule may be necessary to properly design a

constructed wetland system.

69.15(2) Wetland design.

a. Depth. The wetland shall be of a subsurface flow construction with a rock depth of 18 inches and a liquid depth of 12 inches.

b. Materials. Substrate shall be washed river gravel with a diameter of ¾ inch to 2½ inches. If crushed quarried stone is used, it must meet the criteria listed in paragraph 69.9(4)"a."

c. Sizing and configuration. Detention time shall be a minimum of seven days.

(1) Dimensions. Detention time may be accomplished with trenches 16 to 18 inches deep (12 inches of liquid), 3 feet wide, with 100 feet of length per bedroom. Detention time may also be done with beds 16 to 18 inches deep, with at least 300 square feet of surface area per bedroom. The bottom of each trench or bed must be level within ±½ inch.

(2) Configuration. Multiple trenches or beds in series should be used. Beds or trenches in series may be stepped down in elevation to fit a hillside application. If the system is on one elevation, it should still be divided into units by earthen berms at about 50 and 75 percent of the total length.

(3) Unit connections. Each subunit shall be connected to the next subunit with an overflow pipe (rigid sewer pipe) that maintains the water level in the first section. Protection from freezing may be necessary.

d. Liner. Wetlands shall be lined with a synthetic PVC or PE plastic liner 20 to 30 mils thick.

e. Inlet pipe. Effluent shall enter the wetland by a 4-inch pipe sealed into the liner. With beds, a header pipe shall be installed along the inlet side to distribute the waste.

f. Protective berms. Wetland system sites shall be bermed to prevent surface water from entering the trenches or beds.

69.15(3) Vegetation.

> ***a. Setting plants. Vegetation shall be established on the wetlands at the time of construction. Twelve inches of rock shall be placed in each unit, the plants set, and then the final 4 to 6 inches of rock placed.***
>
> ***b. Plant species. Only indigenous plant species, preferably collected within a 100-mile radius of the site, shall be set. Multiple species in each system are recommended. Preferred species include, but are not limited to:***
>
> ***(1) Typha latifolia – common cattail.***
>
> ***(2) Typha angustifolia – narrow leaf cattail.***
>
> ***(3) Scirpus spp. – bullrush.***
>
> ***(4) Phragmites communis – reed.***
>
> ***c. Plant establishment. Transplantation is the recommended method of vegetation establishment. For transplanting, the propagule should be transplanted, at a minimum, on a 2-foot grid. The transplants should be fertilized, preferably with a controlled-release fertilizer such as Osmocote 18-5-11 for fall and winter planting, 18-6-12 for spring planting, and 19-6-12 for summer planting. Trenches or beds should be filled with fresh water immediately.***
>
> ***d. Plant management. In the late fall, the vegetation shall be mowed and the detritus left on the wetland surface as a temperature mulch. In the early spring, the mulch shall be removed and disposed of to allow for adequate bed aeration.***

Le règlement ne définit aucune règle particulière pour les fosses de rétention « holding tank ». La seule mention se retrouve dans les définitions du règlement.

> ***"Private sewage disposal system" includes, but is not limited to, septic tanks, holding tanks for waste, chemical toilets, impervious vault toilets and portable toilets.***
>
> ***"Septage" means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or from a holding tank, when the system is cleaned or maintained.***

Nous comprenons qu'il n'y a pas d'obligation ni de limitation pour ce type d'installation. Le recours à une fosse de rétention est géré au cas par cas et au mérite selon les dispositions prévues pour les autres méthodes de traitement des eaux usées « other methods of wastewater disposal ».

> ***69.19(455B) Other methods of wastewater disposal. Other methods or types of private wastewater treatment and disposal systems shall be installed only after***

> ***plans and specifications for each project have been approved by the administrative authority.***

3.14 FORTES CONTRAINTES : Solutions pour les sites à fortes contraintes

Les systèmes hors-sol « mounds » et en surface du sol « At-grade systems » sont spécifiquement interdits dans les zones inondables à récurrence 10 ans et moins.

> ***69.10(455B) Mound systems.***
>
> ***69.10(1) General requirements.***
>
> ***b. Mound systems shall not be utilized on sites subject to flooding with a ten-year or greater frequency.***

> ***69.11(455B) At-grade systems.***
>
> ***69.11(1) General requirements.***
>
> ***b. At-grade systems shall not be utilized on sites subject to flooding with a ten-year or greater frequency.***

Les systèmes hors-sol « mounds » sont autorisés lorsque l'épaisseur de sol est d'au moins 30 cm avant le roc, la nappe phréatique ou le roc.

> ***69.10(455B) Mound systems.***
>
> ***69.10(1) General requirements.***
>
> ***c. Mound systems shall not be utilized on soils where the high groundwater level, impermeable bedrock or soil strata having a percolation rate exceeding 120 minutes per inch occur within 12 inches of natural grade or where creviced bedrock occurs within 20 inches of natural grade.***

À cet égard, selon la définition ci-dessous et l'article 69.9 à la page suivante, le règlement permet la possibilité d'importer du matériel de remblai pour compenser un sol naturel de mauvaise qualité ou un manque d'épaisseur de sol naturel. Un remblai est défini comme un matériel en place depuis moins d'un an. Nous comprenons donc qu'un sol remblayé depuis plus d'un an n'est pas considéré comme du remblai. Le traitement par infiltration pourrait donc être réalisé dans un sol remanié de bonne qualité.

> ***"Fill soil" means clean soil, free of debris or large organic material, which has been mechanically moved onto a site and has been in place for less than one year.***

De plus, l'article 69.10 confirme notre interprétation puisque l'utilisation des systèmes hors-sol « mounds » doit s'effectuer sur un sol non remanié ou si une analyse a démontré que le sol est propice.

> ***69.10(455B) Mound systems.***
>
> ***69.10(1) General requirements.***
>
> ***d. Mound systems shall be constructed only upon undisturbed naturally occurring soils or where a soil analysis has determined the site is suitable.***

Le règlement prévoit enfin qu'un minimum de 3 pieds (90 cm) de matériel doit constituer le lit d'absorption sous le lit de pierre.

> ***69.10(455B) Mound systems.***
>
> ***69.10(3) Construction details.***
>
> ***a. There shall be a minimum of 3 feet of fill material and undisturbed naturally occurring soils between the bottom of the washed gravel and the highest elevation of the limiting conditions defined in paragraph 69.10(1)"c."***

L'utilisation de matériel de remblai de qualité est aussi possible pour les systèmes en tranchées en vertu de l'article 69.9. De plus, cet article permet de mieux comprendre leur concept de remblai.

> ***69.9(3) Construction details for all soil absorption trenches.***
>
> ***f. Fill soil. Soil absorption systems shall not be installed in fill soil. Disturbed soils which have stabilized for at least one year shall require a recent percolation test or soil analysis.***

L'ensemble de ces éléments nous laisse croire qu'un site avec du sol imperméable en surface peut devenir un site propice au traitement des eaux usées par un procédé d'infiltration. En effet, un site constitué d'un remblai tassé depuis plus d'un an et dont la nature s'avère propice au traitement des eaux usées par infiltration pourrait recevoir un système de traitement. Bien entendu l'épaisseur de sol requise avant la couche limitative doit être respectée.

Enfin, l'article 69.22 du règlement prévoit un mécanisme de dérogation pour toute situation qui ne permet pas de rencontrer les dispositions minimales telles que : les conditions de sol (épaisseur, perméabilité, etc.), les distances séparatrices (rive, littoral, puits, etc.), zones sensibles, etc.

69.22(455B) Variances. Variances to these rules may be granted by the department of natural resources or the administrative authority provided sufficient information is submitted to substantiate the need for and propriety of such action. Applications for variances and justification shall be in writing and copies filed with the department.

3.15 ÉTUDES : Études préalables et mise aux normes

Le règlement prévoit, à l'article 69.3, l'obligation de réaliser une étude de caractérisation du site « site analysis » préalablement à la construction d'une installation septique. Cette démarche est réalisée par les autorités locales en charge de l'application du règlement et non par des consultants ou professionnels externes. Ce même article prévoit aussi une obligation relative à l'inspection des travaux de construction de l'installation septique tel que construite.

> ***69.3(455B) Site analysis.***
>
> ***69.3(1) Site evaluation. A site evaluation shall be conducted by the administrative authority prior to issuance of a construction permit. Consideration shall be given to, but not be limited to, the impact of the following: topography; drainage ways; terraces; floodplain; percent of land slope; location of property lines; location of easements; buried utilities; existing and proposed tile lines; existing, proposed and abandoned water wells; amount of available area for the installation of the system; evidence of unstable ground; alteration (cutting, filling, compacting) of existing soil profile; and soil characteristics determined from a soil analysis, percolation tests, and soil survey maps if available.***
>
> ***a. Soil survey reports. During a site analysis and investigation, maximum use should be made of soil survey reports, which are available from USDA Natural Resources Conservation Service. A general identification of the percolation potential can be made from soil map units in Iowa. Verification of the soil permeability of the specific site must be performed.***
>
> ***b. Final inspections. All newly constructed private sewage disposal systems shall be inspected by the administrative authority before the system is backfilled or at a time prescribed by the administrative authority. A final as-built drawing shall be made as part of the final inspection.***
>
> ***c. Onsite wastewater tracking system. All pertinent information including, but not limited to, the site address, owner, type, date of installation, and as-built drawing of the private sewage disposal system shall be entered into the department's Web-based onsite wastewater tracking system.***

En outre, le règlement détaille spécifiquement la méthode de réalisation de l'essai de percolation. Des méthodes équivalentes sont aussi acceptables.

> ***Appendix B - Percolation Test Procedure***
>
> ***1. At least three test holes distributed evenly over the proposed lateral field are required.***
>
> ***2. Percolation test holes shall be 4 to 12 inches in diameter and to the same depth as the proposed absorption trenches (not to exceed 36 inches in depth).***

3. Sides and bottoms of the test holes shall be scratched or roughened to provide a natural surface. All loose material shall be removed from each hole.

4. The bottoms of the test holes shall be covered with approximately 2 inches of rock to protect the bottom from scouring action when the water is added.

5. The hole shall be filled with at least 12 inches of clean water, and this depth shall be maintained for at least 4 hours and preferably overnight if clay soils are present. It is important that the soil be allowed to soak for a sufficiently long period of time to allow the soil to swell if accurate results are to be obtained. Failure to perform the presoak when required will invalidate the percolation test results.

6. In sandy soils with little or no clay, soaking is not necessary. If, after the hole has been filled twice with 12 inches of water, the water seeps completely away in less than 10 minutes, the test can proceed immediately.

7. Except for sandy soils, percolation rate measurements should be made at least 4 hours but no more than 24 hours after the soaking period began. Any soil that sloughed into the hole during the soaking period is removed, and the water level is adjusted to 6 inches above the gravel (or 8 inches above the bottom of the hole). At no time during the test is the water level allowed to rise more than 6 inches above the gravel.

8. Immediately after adjustment, the water level is measured from a fixed reference point to the nearest ⅛ inch at 30-minute intervals. The test is continued until two successive water level drops do not vary by more than ⅛ inch. At least three measurements are made.

9. After each measurement, the water level is readjusted to the 6-inch level. The last water level drop is used to calculate the percolation rate.

10. In sandy soils or soils in which the first 6 inches of water added after the soaking period seep away in less than 30 minutes, water level measurements are made at 10-minute intervals for a 1-hour period. The last water level drop is used to calculate the percolation rate.

11. The percolation rate is calculated for each test hole by dividing the time interval used between measurements by the magnitude of the last water level drop. This calculation results in a percolation rate in terms of minutes per inch. To determine the percolation rate for the area, the rates obtained from each hole are averaged. (If tests in the area vary by more than 20 minutes per inch, variations in soil type are indicated. Under these circumstances, percolation rates should not be averaged.) EXAMPLE: If the last measured drop in water level after 30 minutes is ⅝ inch, the percolation rate = (30 minutes)/(⅝ inch) = 48 minutes/inch.

Le règlement encadre la mise aux normes des installations existantes à l'article 69.1. La démarche d'autorisation est la même que pour une installation septique desservant un nouveau bâtiment. La réparation d'une composante qui n'est pas impliquée dans le traitement ou l'évacuation est toutefois exemptée.

> ***69.1(3) General regulations.***
>
> ***a. Connections to approved sewer system.***
>
> ***[…]***
>
> ***(4) If a building is to be connected to an existing private sewage disposal system, that existing system shall meet the standards of these rules and be appropriately sized***
>
> ***c. Construction or alteration. All private sewage disposal systems constructed or altered after March 18, 2009, shall comply with this chapter. Alteration includes any changes that affect the treatment or disposal of the waste. Repair of existing components that does not change the treatment or disposal of the waste is exempt. However, the discharge restrictions in paragraph "b" above apply.***
>
> ***d. Abandonment. Private sewage disposal systems that are abandoned shall have the septic tank pumped, the tank lid crushed into the tank, and the tank filled with sand or soil.***

> ***69.1(4) Construction permit required. No private sewage disposal system shall be installed or altered as described in paragraph 69.1(3)"c" unless a construction permit issued by the administrative authority has been obtained. The installation shall be in accordance with these rules.***

3.16 AUTRES:

Éléments du Q-2, r.22 qui sont couverts par le territoire visé

Définitions	X
Hiérarchie du choix d'un système	
Obligation de vidange des fosses septiques	
Méthodes pour établir la perméabilité du sol	X
Plages de perméabilité	X
Référence aux normes BNQ/NSF	
Normes de construction des fosses construites sur place	X
Préfiltre	
Norme spécifique au déboisement (élément épurateur classique)	
Conduite d'amenée, raccordements et ventilation	X
Champ d'application du Règlement/type d'eau	X
Prohibition de rejeter des eaux usées	X
Interdiction d'utiliser certains produits (désinfection de ces eaux usées)	
Conditions d'émission des permis (plan, études, etc.)	x
Implication d'un professionnel compétent pour la conception (Ordre professionnels)	
Désaffectation des systèmes	X
Gestion des boues et des autres résidus	X
Cheminement des eaux et des effluents	X
Normes de localisation pour les systèmes étanches et les systèmes non étanches	X
Normes techniques à respecter (matériaux, dimensions, etc.)	X
Conditions d'implantation des systèmes (pente, perméabilité, épaisseur de sol naturel, etc.)	X
Obligation d'entretien et/ou de maintenir un contrat d'entretien des systèmes certifiés	X
Normes de rejet des systèmes	X
Systèmes spécifiquement pour des résidences/bâtiments existants	
Toilettes à compost	
Cabinet/toilettes sèches	X
Solutions si ségrégation des eaux (toilettes vs eaux ménagères) (ex : vidange périodique)	
Déclencheurs/droits acquis pour la mise aux normes de systèmes existants	
Dispositions encadrant les rejets au fossé/cours d'eau	X
Déphosphatation	X
Désinfection	X
Méthodes de prélèvement et d'analyse des rejets des systèmes	X
Définit la responsabilité des municipalités pour l'application du Règlement	
Amendes/infractions	
Dispositions applicables à des territoires particuliers (Basse-Côte-Nord Iles-de-la-Madeleine, etc.)	

Éléments couverts par le territoire visé et qui ne sont pas traités dans le Q-2, r.22

- Obligation d'inspection lors de la vente
- Normes techniques sur d'autres types de systèmes de traitement (At-grade, recirculating textile filter, aerobic treatment unit, constructed wetlands, etc.)
- Possibilité de dérogation, usage de remblai

ANNEXES Iowa:

General Permit No. 4 for Discharge from Private Sewage Disposal Systems

Iowa Department of Natural Resources

National Pollutant Discharge Elimination System (NPDES)

General Permit No. 4
For
Discharge from Private Sewage Disposal Systems

Effective Dates: March 1, 2018 through February 28, 2023

502 East 9th Street, Des Moines, IA 50319
515-725-8200 FAX 515-725-8202
http://www.iowadnr.gov/Environmental-Protection/Water-Quality/Private-Septic-Systems/General-Permit-4

Table of Contents

Part I. Coverage Under This Permit

A. Permit Area.

This permit covers all the areas of the State of Iowa.

B. Eligibility.

1. This permit covers the discharge from any Private Sewage Disposal System which discharges to a designated surface water of the state or a subsurface drainage tile and is constructed in accordance with 567 IAC Chapter 69.

2. Limitations on Coverage. This permit does not cover the following types of discharges:

    1) Discharge from any system which does not meet the minimum construction standards described in 567 IAC Chapter 69.

    2) Any non-domestic wastewater discharge such as a car wash, autobody shop, or any other source of industrial wastewater.

    3) Any private sewage disposal system with a currently effective individual NPDES permit.

    4) Any private sewage disposal system that discharges to a state owned natural or artificial lake, an Outstanding Iowa Water or an Outstanding National Water as defined in IAC 567-61.2(2).

3. Exclusions. The following private sewage disposal systems' discharges do not require an NPDES permit:

    1) Private sewage disposal systems which discharge to the surface of the ground where the effluent will not reach a designated water of the state or a subsurface drainage tile.

    2) Private sewage disposal systems that discharge to the subsurface. Such systems include soil absorption trenches, mound systems, drip irrigation systems, or any other system with subsurface absorption.

C. Requiring An Individual Permit.

1. The Iowa Department of Natural Resources (Department) may require any person authorized to discharge under this permit to apply for and obtain an individual NPDES permit. The causes for such a request may include but are not limited to location of the discharge, amount of discharge, and history of non-compliance with the general permit condition. When the Department notifies a discharger to apply for an individual permit, a deadline, not longer than one year, will be established for submitting the application. If a person fails to submit an individual NPDES permit application by the deadline established by the Department under this paragraph, his/her coverage under this general permit is automatically terminated at the end of the day specified for the application submittal.

2. Any person authorized to discharge by this permit may apply for an individual permit from the Department. The application for an individual permit shall include DNR Form 30 (542-3220) and all applicable fees and shall be submitted to the Department in accordance with 567 IAC 64.3(4)(a).

3. When an individual NPDES permit is issued to a discharger, the applicability of this general permit to the individual NPDES permit applicant is automatically terminated on the issuance date of the individual

permit. When an individual NPDES permit is denied to a person for a discharge otherwise subject to this general permit, the applicability of this general permit to the individual NPDES permit applicant is automatically terminated on the date of such denial, unless otherwise specified by the Department.

D. Authorization.

1. If the owner of a private sewage disposal system proposes to discharge from the disposal system to a designated water of the state or a subsurface drainage tile, he/she must submit a complete Notice of Intent (NOI) in accordance with the requirements of Part II of this general permit to be authorized to discharge under this general permit.

2. Unless notified by the Department to the contrary, owners who have submitted complete NOIs are authorized to discharge effluent from a private sewage disposal system constructed in accordance with IAC 567 Chapter 69 and meet all the terms and conditions of this permit. Upon review of the NOI, the Department may deny coverage under this permit and require submittal of an application for an individual NPDES permit pursuant to Part I.C.1 of this general permit. If the Department determines that the discharge is eligible for coverage under this general permit, an authorization will be sent to the applicant.

E. Reauthorization.

1. The permit will be reauthorized and reissued prior to the expiration date of this permit.

2. Prior to the expiration of an authorization issued under this permit, the owner shall resubmit a NOI with the Department for coverage under the reissued general permit.

3. If this permit is not reissued prior to the expiration date, it will be administratively continued in accordance with 40 CFR 122.6 and IAC 567 64.8 and it will remain in force and effect for discharges that were covered prior to permit expiration date. If a system was granted permit coverage prior to the permit expiration date and the owner resubmitted NOI as specified above, the system will automatically remain covered by this permit until the earliest of:
    1) Authorization for coverage granted by the Department under a reissued or replacement of this general permit, following owner's timely submittal of a complete NOI requesting authorization to discharge under the new permit and compliance with the requirements of the new permit; or
    2) Owner's submittal of a Notice of Discontinuation; or
    3) Issuance of an individual permit for the system's discharge; or
    4) A formal decision by the Department not to require permit coverage for the discharge.

Part II. Notice of Intent Requirements

A. Deadlines for Filing a Notice of Intent.

1. The owner shall file a NOI for coverage under this general permit with the Department when the construction permit is issued by the local administrative authority. A copy of the NOI must also be filed with the local administrative authority.

2. Owners of existing private sewage disposal systems constructed prior to the effective date of this general permit shall file a NOI by December 31, ~~2012~~ 2018.

B. Failure to Notify.

1. Owners who fail to notify the Department of their intent to be covered by this general permit, or who discharge pollutants to designated waters of the state or a subsurface drainage tile without an NPDES permit, are in violation of the Clean Water Act and the Code of Iowa 455B.

C. Contents of the Notice of Intent.

1. A complete NOI shall include DNR Form 542-1541, signed in accordance with Part IV.C of this permit. The information on the form shall include the following:

   1) The owner's name, address, and telephone number.

   2) The location of the private sewage disposal system. Location shall be provided as ¼, ¼, ¼ Section, Township, Range, and County in which the system discharges, or as the GPS coordinates and County.

   3) The type of secondary treatment system from which the discharge originates (i.e., sand filter, aerobic treatment unit, peat filter, textile filter, waste stabilization pond, constructed wetland).

   4) A certification that the information provided is accurate.

   5) A certification that the terms and conditions of the general permit will be met.

   6) Certification that the system will be constructed in conformance with the requirements of IAC 567 Chapter 69, if permit coverage is for a new or replacement private sewage disposal system.

D. Where to Submit.

1. The NOI must be filed with the Department at the following address (or as directed by the Department)

   NPDES Section
   Iowa Department of Natural Resources
   502 E. 9th Street
   Des Moines, IA 50319-0034

2. A copy of the completed NOI shall be submitted to the local administrative authority after applying for a construction permit for a private sewage disposal system.

Part III. Compliance Requirements

A. Compliance.

1. The system owner shall be responsible for assuring that compliance with all the permit terms and conditions is met.

B. Effluent Sampling by Qualified Samplers.

1. The owner is responsible to have the private sewage disposal system sampled to ensure compliance with this general permit. Only a "qualified sampler" shall conduct effluent sampling for compliance monitoring. "Qualified samplers" shall be one of the following:

1) A county or city environmental health staff person;

2) An Iowa-certified wastewater treatment operator; or

3) An individual who has received training approved by the Department to conduct effluent sampling.

C. Sampling Frequency and Testing Parameters.

All permitted discharging private sewage disposal systems shall be sampled and tested no less than twice a year at six-month intervals for Carbonaceous Biochemical Oxygen Demand (CBOD5) and Escherichia coli (E. coli), and once a year for total suspended solids (TSS).

D. Effluent quality limits are as follows:

Effluents Discharging To	E. coli cfu/100 mL	CBOD5 mg/L	TSS mg/L
Class "A1", "A3" waters	235	25	25
Class "A2" waters	2880	25	25

E. Sampling Location and Procedure:

1. Effluent samples must be collected from an approved sampling port or from the end of the discharge pipe (if accessible) following the final treatment component of the system. If the system is not discharging at time of sampling, but appears to have been discharging, water must be added to the system through the building plumbing to create a discharge. If there is no evidence of a discharge from the system within the previous six months, only a physical inspection of the discharge area for any signs of surfacing effluent is required. If no sample was collected, a brief inspection report must be submitted to the local administrative authority and to the Department explaining why no sample was collected.

2. Effluent samples must be analyzed by a laboratory certified by the Department. A list of certified laboratories is available from the Department or the local administrative authority. Sample containers provided by the laboratory must be used for the sample. The sample must be collected from a free falling effluent pipe or sampling port where the effluent is flowing. Samples shall not be taken from a pooled location. Samples must be cooled to 4 degrees C (38 degrees F) immediately after collection and be maintained at this temperature during transport to the laboratory. (Packing the sample in ice is satisfactory). The sampler must ensure that the laboratory receives samples within one day (24 hours) of collection.

F. Reporting of Sample Results and Repeat Sampling:

1. The owner must submit all required sample test results to the Department and to the local administrative authority. All required sample test results must also be sent to the maintenance contractor, if applicable.

G. Duty to mitigate

1. If a sample does not meet the effluent limits, the owner must investigate the potential causes of the problem, and a repeat sample must be taken within 30 days for the specific parameter that was out of compliance. If three consecutive samples do not meet the effluent limits, the owner must take corrective actions to bring the system into compliance.

H. Retention of Records

1. The owner shall retain records of all monitoring information required by this permit for a period of three years.

2. The records of monitoring information shall include:
   1) The date, exact place, and time of sampling or measurement;
   2) The name of the individual who performed the sampling or measurement;
   3) The date analyses were performed;
   4) The name of the laboratory that performed the analyses; and,
   5) The results of the analyses.

Part IV. Standard Permit Conditions.

A. Duty to Comply.

1. The owner of a private sewage disposal system that discharges to a designated water of the state or a subsurface drainage tile must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the Code of Iowa and the Clean Water Act and is grounds for enforcement action, termination of coverage under this general permit, or for denial of a request for coverage under a reissued general permit.

B. Duty to Provide Information.

1. The owner shall furnish to the Department or to the local administrative authority any information relative to the construction, operation or maintenance of this facility, including effluent sample test results, within the time period specified by the Department.

C. Signatory Requirements.

1. An NOI for this permit shall be signed by the owner of the system.

2. If the owner is not an individual, the person signing the NOI shall be as follows:

   1) Corporations. In the case of corporations, a principal executive officer of at least the level of vice-president.

   2) Partnerships. In the case of a partnership, a general partner.

   3) Sole proprietorships. In the case of a sole proprietorship, the proprietor.

D. Severability.

1. If any provision or application of any provision to any circumstances is found to be invalid by this Department or by a court of law, all other provisions and conditions shall remain effective.

E. Permit Actions:

1. Coverage under this general permit may be terminated for cause. The filing of a request by the owner for a permit discontinuance, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

F. Legal and Financial Liability Waiver:

1. No legal or financial responsibility arising from the operation or maintenance of any disposal system or part thereof installed by the permittee to achieve compliance with this permit shall attach to the State of Iowa or the Department.

G. Transfer of coverage under this permit:

1. For discharges covered under this general permit, when the property with a private sewage system changes ownership, the Department must be notified of the title transfer prior to the new owner taking possession of the property. After the Department is thus notified, the new owner(s) shall be subject to all terms and conditions of this general permit from and after the date the Department receives written notice of transfer of responsibility.

H. Notice of Discontinuation:

1. If a private sewage disposal system is modified to a system that does not discharge to a designated water of the state or a subsurface drainage tile, the owner of the system shall submit a Notice of Discontinuation to the Department.

2. The Notice of Discontinuation shall include the following information:
   1) the name of the owner to which the permit authorization was issued;
   2) the general permit authorization number;
   3) the date the discharge is discontinued; and,
   4) the following certification signed in accordance with Part IV.C.2 of this permit:

"I certify under penalty of law that discharge from the above private sewage system is discontinued. I understand that by submitting this Notice of Discontinuation, I am no longer authorized to discharge from my private sewage disposal system by Iowa Department of Natural Resources NPDES General Permit No. 4 and that discharging pollutants from my private sewage disposal system to designated waters of the state or a subsurface drainage tile is unlawful under the Clean Water Act and Code of Iowa.

Part V. Reopener Clause

If there is evidence indicating potential or realized impacts to water quality due to any discharge from an authorized private sewage disposal system covered by this general permit, the owner of such system may be required to obtain an individual permit in accordance with Part I.C of this general permit.

Part VI. Definitions.

"Administrative Authority" means the local (county or city) or regional Board of Health authorized under Code of Iowa 455B.172 to regulate private sewage disposal systems and the Department.

"Carbonaceous Biochemical Oxygen Demand (CBOD5)" means a five-day measurement of the amount of oxygen used by microorganisms in the biochemical oxidation of organic matter.

"Class 'A1' water," also referred to as a primary contact recreational use water, means waters in which recreational or other uses may result in prolonged and direct contact with the water, involving considerable risk of ingesting water in quantities sufficient to pose a health hazard. Such activities would include, but not be limited to, swimming, diving, water skiing, and water contact recreational canoeing.

"Class 'A2' water," also referred to as a secondary contact recreational use water, means waters in which recreational or other uses may result in contact with the water that is either incidental or accidental. Such uses include fishing, commercial and recreational boating, any limited contact incidental to shoreline activities and activities in which users do not swim or float in the water body while on a boating activity.

"Class 'A3' water," also referred to as a children's recreational use water, means waters in which recreational uses by children are common. Such waters are water bodies having definite banks and bed with visible evidence of the flow or occurrence of water. This type of use would primarily occur in urban or residential areas.

"Department" means the Department of Natural Resources of the State of Iowa.

"Private sewage disposal system" means a system which provides for the treatment or disposal of domestic sewage from four or fewer dwelling units or the equivalent of less than sixteen individuals on a continuing basis. This includes domestic waste, whether residential or nonresidential, but does not include industrial waste of any flow rate except as provided for in IAC 567-68.11. "Private sewage disposal systems" includes, but is not limited to, septic tanks, holding tanks for waste, chemical toilets, impervious vault toilets, and portable toilets.

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

SOURCES Iowa:

1. *Iowa Administrative Code, Environmental Protection [567], Chapter 68 Commercial Septic tank cleaners, 2012*
2. *Iowa Administrative Code, Environmental Protection [567], Chapter 69 Private Sewage Disposal Systems, 2012*
3. *Iowa Department of Natural Resources, National Pollutant Discharge Elimination System (NPDES) - General Permit No. 4 For Discharge from Private Sewage Disposal Systems 2018-2023*

4.0 MAINE

4.1 ENCADREMENT :

C'est le département de la santé «Department of health & human services – Maine center for disease control & prevention – Division of environmental health » qui est responsable de la mise en place du cadre règlementaire relatif à l'évacuation et au traitement des eaux usées dans l'État du Maine. Le cadre réglementaire relatif aux installations septiques est déterminé par un règlement, soit le :

- « Subsurface wastewater disposal rules, 10-144-CMR 241», ci-après le règlement. La dernière mise à jour de la norme date de 2014.

> ***Subsurface wastewater disposal rules, 10-144-CMR 241 - Summary:***
>
> ***This rule governs the siting, design, construction and inspection of subsurface wastewater disposal systems in order to protect the health, safety and welfare of the citizens of Maine. Approved procedures, design and siting requirements, materials, methods and administrative polices are described in detail.***

D'autres réglementations parallèles régissent certains aspects plus spécifiques tels que les «Rules for conversion of seasonal dwelling units into year-round residences in the shoreland zone, 10-144 CMR 242 », « Minimum lot size rules, 10-144 CMR 243 », et «Rules for site evaluators of subsurface wastewater disposal systems, 10-144 CMR 245 »

Un document de vulgarisation connu comme le « Site evaluation for subsurface wastewater disposal design in Maine » est également publié par l'État à titre de complément plus visuel. Ce document contient seulement des recommandations.

> ***Site evaluation for subsurface wastewater disposal design in Maine - Introduction***
>
> ***[...] This material is presented as a training guide for individuals interested in Site Evaluation. The interested person should seek training and education in basic soils, classification, morphology, and subsurface wastewater disposal system design. Furthermore, there is no substitute for actual field experience; either through the formal educational procedure or with a Licensed Site Evaluator. [...]***

Le règlement prévoit que son application relève des « Local plumbing inspectors (LPI) »

> ***SECTION 1, INTRODUCTION, A. GENERAL***

> ***1. Scope: These Rules govern the general regulation of all subsurface wastewater systems. No person may erect a structure that requires a subsurface waste water disposal system until documentation has been provided to the municipal officers that the disposal system may be constructed in compliance with these rules (30-A M.R.S. § 4211).***
>
> ***2. Duties and powers of Local Plumbing Inspector: The Local Plumbing Inspector (hereafter, LPI) shall enforce all the provisions of these Rules. He or she shall act on any question concerning the method or manner of construction and the materials to be used in the installation of a system, except as may be specifically provided for by other requirements of these Rules.***
>
> ***3. Application for disposal system permits: The LPI shall receive applications for disposal system permits, issue permits for the installation of systems, inspect the premises for which such disposal system permits have been issued, and enforce compliance with the provisions of these Rules.***
>
> ***4. Notices and orders: The LPI shall issue all necessary notices or orders pertaining to removal of illegal or unsafe conditions, the requirement of necessary safeguards during construction, and compliance with all requirements of these Rules for the safety, health, and general welfare of the public.***

On en comprend que les LPI sont l'équivalent des inspecteurs municipaux mais possédant une certification spécifique relevant de l'État pour agir dans le domaine. Leur certification renouvelable aux 5 ans repose sur un programme de formation continue en collaboration avec les départements de l'éducation, de l'environnement, de la santé et de la sécurité civile.

> ***Local plumbing inspector: Also L.P.I. or LPI. An inspector appointed by the municipality and certified by the State with the responsibilities delineated by 30-A M.R.S. § 4221, 4451, and these Rules.***

Le règlement n'apparait pas prévoir de limitation au débit journalier. La juridiction d'intervention est toutefois transférée à l'État pour pré-approbation pour les systèmes traitant un débit journalier excédant 2000 gallons par jour ou dont la concentration combinée de DBO5 et de matière en suspension excède 1400 mg/l. Il inclut tout de même la démarche nécessaire au traitement de différente gamme de débits journalier sans seuil maximal.

> ***SECTION 5 - APPLICATION FOR DISPOSAL SYSTEM PERMIT - GENERAL***
>
> ***[...]3. Page two of the HHE-200 form:***
>
> ***(a) The Site Plan must be drawn at a scale that clearly depicts the following site features that directly affect the system design and compliance with these Rules, and if practical, within the following distances within at least a 100-***

> ***foot radius around systems with design flows less than 1,000 gallons per day, 200-foot radius around systems with design flows between 1,000 and 2,000 gallons per day,and at least a 300-foot radius around engineered systems (systems with design flows of 2,000 gallons per day or more) [...]***

4.2 TYPE D'EAU : Types d'eau visés par l'encadrement

Le règlement définit le type d'eaux usées visées à la section 14 :

> ***SECTION 14 - DEFINITIONS***
>
> ***Wastewater: Any domestic wastewater, or other wastewater from commercial, industrial, or residential sources which has constituents similar to that of domestic wastewater. This term specifically excludes hazardous or toxic wastes and materials.***

Les eaux usées encadrées doivent conséquemment correspondre à des caractéristiques d'eaux d'origine domestique. Le règlement explicite certains types d'eaux susceptible d'altérer le fonctionnement de l'installation et faisant conséquemment l'objet de prohibition.

> ***SECTION 1 – INTRODUCTION***
>
> ***[…]***
>
> ***E. PROHIBITIONS***
>
> ***1. The use of system cleaners that contain restricted chemical materials is deemed a discharge of industrial wastes and is prohibited.***
>
> ***2. Chemicals, other than normal amounts of household cleaners, must not be disposed of in the disposal field. Examples of prohibited chemicals include, but are not limited to, pesticides, oil-based paints or stains, paint remover, paint thinner, acids, gasoline, solvents, glues and adhesives, pool chemicals, paint, paint thinner, commercial grease and oil, darkroom chemicals, and medications.***
>
> ***3. Roof drains and foundation drains: Roof drains and foundation drains must not be connected to systems.***

L'application du règlement est toutefois étendue même aux établissements générant une somme de DBO5 et de matière en suspension excédant la normale résidentielle par l'intégration d'un facteur d'ajustement. Un surdimensionnement de l'installation pourrait ainsi être pris en compte pour gérer des situations d'établissements à fortes charges.

> ***SECTION 4 - DESIGN CRITERIA***
>
> ***H. ADJUSTMENTS FOR EFFLUENT QUALITY***
>
> ***3. Disposal field sizing: The size of the disposal field must be adjusted utilizing the factors listed in Table 4B when the wastewater entering a disposal field has a combined 5-day biochemical oxygen demand (BOD5) and total suspended solid (TSS) concentration not equal to 240 milligrams per liter.***

La demande même si elle est faite en vertu du même règlement doit toutefois être soumise à l'État pour une approbation écrite. Le traitement de la demande d'autorisation apparait toutefois être du même ordre par le LPI à l'exception de nécessiter un avis de projet supplémentaire de la part de l'état.

> ***SECTION 4 - DESIGN CRITERIA***
>
> ***H. ADJUSTMENTS FOR EFFLUENT QUALITY***
>
> ***5. State approval: An adjustment factor may not be used unless the proposal has been approved in writing by the Department and the owner has agreed to all conditions (if any) included in the letter of approval.***
>
> ***(a) State review: The application must be reviewed for compliance with these Rules, good engineering practice, use of the best acceptable technologies, and protection of the public welfare.***
>
> ***(b) Acceptable technology: The use of additional pretreatment to lower the expected wastewater strength must be reviewed by the Department. Approval will require the adoption of an acceptable program for operation, inspection and maintenance appropriate for the proposed technology.***

4.3 DENSITÉ MAXIMALE : Densité maximale des installations septiques

Alors qu'au Québec, les règles de lotissement sont d'application municipale, le Maine en réglemente toutefois une partie à l'échelle de l'État par l'application des « Minimum lot size rules, 10-144 CMR 243 » afin de tenir compte de la densité d'occupation. L'impact cumulatif des rejets d'eaux usées dans des secteurs densément occupés n'est toutefois pas abordé par la réglementation.

> ***Minimum lot size rules, 10-144 CMR 243***
>
> ***BASIS STATEMENT: These Rules provide minimum State requirements for minimum lot sizes for developments using onsite subsurface wastewater disposal to assure environmental sanitation and safety. These Rules are intended to complement municipal planning, zoning, and land use control.***
>
> ***[...]***
>
> ***1001.1.1 Single-family dwelling units: A lot on which a single-family dwelling unit is located shall contain at least 20,000 square feet. If the lot abuts a lake, pond, stream, river, or tidal area, it shall have a minimum frontage of 100 feet on the water body and any greater frontage required by local zoning. For purposes of this Code, a single-family residential unit shall be determined to be 300 gallons per day of wastewater.***

Ces normes prévoient toutefois un mécanisme de dérogation à adresser à l'État en cas d'incompatibilité avec les normes minimales fixées

> ***1003.1 Application required: An application for a minimum lot size waiver is required for any subsurface wastewater disposal system on a lot not meeting the minimum area or frontage requirements of this Code unless grandfathered pursuant to Section 1000.6.***

La clause "grand-père" prévue exclue toutefois les constructions existantes de cette application.

> ***1000.6 Existing structures: This Code does not apply to any structure in existence and in place on or before October 3, 1973, which then or theretofore disposed of wastes by means of subsurface wastewater disposal; except that no person shall reduce the size of the lot upon which such structure is located to a size or frontage less than that allowed in Section 1001.1. The division of a lot upon which a number of such structures existed on or before October 3, 1973, into a number of lots not exceeding the number of structures, with one or more structures on each new lot is not subject to this Code, if the size of the lot, and/or the frontage has not been reduced since October 3, 1973.***

4.4 REJETS : Rejets en surface

N/A en vertu du document d'appel d'offres

4.5 CONTAMINANTS : Contaminants encadrés

Le règlement vise le traitement des eaux usées en fonction de leur concentration en DBO5 et matières en suspension.

> ***H. ADJUSTMENTS FOR EFFLUENT QUALITY***
>
> ***3. Disposal field sizing: The size of the disposal field must be adjusted utilizing the factors listed in Table 4B when the wastewater entering a disposal field has a combined 5-day biochemical oxygen demand (BOD5) and total suspended solid (TSS) concentration not equal to 240 milligrams per liter.***
>
> ***(a) Values less than 240 mg/L: The constructed size of a stone disposal field may be reduced by use of the appropriate factor from Table 4B. The constructed size of a proprietary device disposal field may be reduced by use of the appropriate factor from Table 4B, provided a reduction is allowed by the manufacturer. If an adjustment factor resulting in a reduction in the disposal area of more than 50 percent is utilized, the HHE- 200 Form submitted for permitting must delineate a disposal area without the use of any adjustment factor.***
>
> ***(b) Values greater than 240 and less than or equal to 2,000 mg/L: The size of a disposal field must be increased by use of the appropriate factor from Table 4B.***
>
> ***(c) Values greater than 2,000 mg/L: Subsurface wastewater disposal areas designed to handle wastes with a combined BOD5 and TSS greater than 2,000 mg/L are beyond the scope of these Rules and may require licensing by the Department of Environmental Protection as specified in Section 1(D)(2) of these rules.***

Le dimensionnement d'un système est donc prévu en fonction d'une concentration combinée de DBO5 et matière en suspensions de 240 mg/l. L'application d'un facteur d'ajustement occasionnant un sous-dimensionnement ou un surdimensionnement en fonction de concentrations différentes doit toutefois faire l'objet d'une approbation de l'État.

> ***5. State approval: An adjustment factor may not be used unless the proposal has been approved in writing by the Department and the owner has agreed to all conditions (if any) included in the letter of approval.***

À titre d'exemple en référence aux tables de calcul, une concentration de 30 mg/l ou moins permet la réduction maximale de 50% de la surface nécessaire alors qu'une concentration de 2000 mg/l nécessite une superficie doublée.

Les autres types de polluants encadrés le sont uniquement dans le cadre du processus de certification d'une technologie alternative mais n'apparaissent pas faire l'objet d'un suivi rendu

obligatoire par l'État une fois sa performance démontrée et sa commercialisation autorisée. Le règlement en réfère toutefois au guide d'opération et d'entretiens devant être fourni par le concepteur qui, lui, pourrait prévoir une routine d'échantillonnage si justifié.

4.6 CERTIFICATION : Entité responsable d'effectuer la certification des différents intervenants et des technologies

La réglementation prévoit différents processus de certification des nouvelles technologies de traitement. La certification NSF ou CSA d'un produit apparait d'emblée reconnue.

> ***HH. NEW PRODUCT REGISTRATION***
>
> ***4. (d) Advanced Wastewater Treatment Units and Effluent Filters: Advanced treatment units for treatment of wastewater as defined in these Rules, and septic tank effluent filters which have been certified by the National Sanitation Foundation (NSF), Canadian Standards Authority (CSA), or other third party testing entity are accepted by the Department for General Use in Maine, upon submission of such certification to the Department.***

Une autre technologie sans certification pourrait toutefois faire l'objet d'une approbation par le processus interne décrit au règlement.

> ***HH. NEW PRODUCT REGISTRATION***
>
> ***4. Registration: There are levels of approval for product registration: Pilot, Provisional, and General Use. All Pilot and Provisional product registration installations must be approved by the Department prior to installation.***

Ce processus vise essentiellement à évaluer la performance de la technologie proposée en matière de réduction de DBO5 et matières en suspension mais également de differentes molécules d'azote et de coliformes. La technologie soumise évolue ainsi à titre de projet pilote sur 10 installations, d'approbation conditionnelle sur 50 installations et finalement d'approbation générale en fonction de la démonstration du maintien de sa performance. Ce processus est réalisé sous la supervision du département de la santé.

La certification de professionnels en conception est également sous la responsabilité de l'État en vertu des « Rules for site evaluators of subsurface wastewater disposal systems - 10-144 CMR 245»

> ***Chapter 245: RULES FOR SITE EVALUATORS OF SUBSURFACE WASTEWATER DISPOSAL SYSTEMS***
>
> ***BASIS STATEMENT: These Rules provide minimum State requirements for administration, examination and licensing for persons who design onsite subsurface wastewater disposal systems to assure environmental sanitation, public health, and safety. These Rules are intended to complement municipal planning, zoning, and land use control.***

> ***Chapter 245: RULES FOR SITE EVALUATORS OF SUBSURFACE WASTEWATER DISPOSAL SYSTEMS***
>
> ***400. Methods of Qualification***
>
> ***A. Education***
>
> ***1. Be a graduate from an accredited college or university with an undergraduate degree in engineering, geology, pedology, or similar discipline.***
>
> ***2. Have twelve (12) months or more of work experience directly involved in the practice of site evaluation or which relates to the practice of site evaluation; or***
>
> ***B. Experience***
>
> ***1. Be a high school graduate or equivalent.***
>
> ***2. Have four (4) years or more of work experience directly involved in the practice of site evaluation or which relates to the practice of site evaluation.***

Tel que déjà abordé précédemment, les "Local plumbing inspectors" accrédités par l'État sont quant à eux responsables de l'application locale du cadre réglementaire.

L'installation de systèmes de traitement des eaux usées d'origine domestique ne requiert pas de certification d'installateur du département de la santé.

> ***SECTION 1 - INTRODUCTION***
>
> ***D. DEPARTMENT OF ENVIRONMENTAL PROTECTION***
>
> ***1. License Not Required: In accordance with 38 M.R.S. § 413, a waste discharge license is not required for the installation, operation or maintenance of a subsurface wastewater disposal system for the subsurface disposal of domestic wastewater or other wastewater from commercial, industrial, or residential sources which is of a similar quality (constituents and strength) or of a lesser pollutant load strength to that of domestic wastewater provided it has been designed and installed in conformance with these Rules. This includes, but is not limited to, wastewater normally associated with hospitals, restaurants, nursing homes, schools, hotels, motels, and medical, dental, veterinary facilities, and backwash from water treatment systems, provided all pollutants including, but not limited to, radionuclides will be appropriately and adequately treated, and similar types of wastewater.***

L'État fourni toutefois une certification volontaire d'installateur donnant la possibilité d'apparaitre sur une liste de référencement transmise sur demande aux différents intervenants.

La certification consiste à suivre une formation de base et un minimum de 6 heures de formation continue aux 5 ans pour son maintien.

4.7 CAPACITÉ : Capacité des fosses septiques

Le règlement encadre la capacité effective des fosses septiques de la façon suivante :

> ***SECTION 6***
>
> ***APPROVED MATERIALS AND EQUIPMENT***
>
> ***G. LIQUID CAPACITY OF SEPTIC TANKS***
>
> ***1. The minimum liquid capacity of the septic tank(s) serving 1 to 3-family dwelling units must meet the capacity requirements of Table 6A for each dwelling unit. For example, a duplex comprised of one two-bedroom unit and one three-bedroom unit would require a septic tank capacity of 1,750 gallons.***
>
> ***2. Septic tank size for other than 1 to 3-family dwelling units: When serving structures other than 1 to 3-family dwelling units, the liquid capacity must be a minimum of 150 percent of the design flow prescribed in Section 4, or as specified in Section 6(G)(3), whichever is greatest.***
>
> ***3. Minimum septic tank size: The minimum liquid capacity of an individual septic tank must be 750 gallons for any use.***
>
> ***4. Septic tanks for engineered systems: Multiple compartment or multiple septic tanks are required for institutional and commercial installations where the design flow (determined as prescribed in Section 4) is greater than 2,000 gallons.***
>
> ***TABLE 6A***
>
> ***SEPTIC TANK CAPACITY FOR DWELLING UNITS***
>
> ***Number of bedrooms***
>
> ***per Unit***
>
> ***Minimum septic tank***
>
> ***liquid capacity per Unit***
>
> ***1 Bedroom 750 gallons***
>
> ***2 Bedrooms 750 gallons***
>
> ***3 Bedrooms 1,000 gallons***
>
> ***4 Bedrooms 1,000 gallons***
>
> ***5 Bedrooms 1,250 gallons or***
>
> ***For each additional bedroom 250 gallons per bedroom***

> ***5. Multiple septic tanks: 2 or more septic tanks may be connected in series to obtain the minimum required liquid capacity, provided each septic tank has a capacity at least as great as the preceeding septic tank. [...]***

4.8 VIDANGE : Encadrement de la vidange des fosses septiques

La réglementation prévoit qu'une fosse septique doit être vidangée selon la méthode de mesure de l'écume et des boues, sans distinction du caractère saisonnier ou non.

> ***SECTION 6***
>
> ***APPROVED MATERIALS AND EQUIPMENT***
>
> ***I. MAINTENANCE AND SLUDGE DISPOSAL***
>
> ***1. Maintenance: Septic tanks and other treatment tanks should be regularly maintained. As a general rule, the tank contents should be removed whenever the sludge and scum occupies one-third of the tank's liquid capacity.***

Quoiqu'intégré au règlement, il semble s'agir avant tout d'une recommandation aux propriétaires considérant la formulation « générale » et en l'absence de mesure de contrôle ou de suivi à cet effet.

4.9 SUIVI : Nécessité de faire le suivi des installations septiques

L'entretien des installations septique relève à la base de la responsabilité du propriétaire.

> ***SECTION 2 - ADMINISTRATION***
>
> ***F. REPAIRS AND MAINTENANCE***
>
> ***3. Maintenance: All new and existing systems must be maintained in a safe and sanitary condition. All service equipment, devices, and safeguards required by these Rules, or that were required for a system by previous subsurface wastewater disposal codes, must be maintained in good working order when installed, altered, or repaired.***
>
> ***4. Property owner's responsibility: The property owner or property owner's agent is responsible for the safe and sanitary maintenance of the system at all times.***

Le principe diffère dans le cas des systèmes de traitement à base de tourbe ou de plus de 2000 gallons/jour ou d'une concentration totale DBO5/MES de plus de 1400 mg/l où le concepteur doit fournir les recommandations d'entretiens requises et pourrait à ce moment formuler la recommandation à l'effet que cette opération soit effectuée par une personne qualifiée.

> ***SECTION 10 - MISCELLANEOUS SYSTEMS***
>
> ***A. ENGINEERED DISPOSAL SYSTEMS***
>
> ***b. Owner/operator: The owner/operator shall accurately describe the intended uses (present and future) for the system, and designate to the Department a Maine professional engineer to serve as design engineer. The owner shall operate the system within the design parameters, except as provided for in Section 9(A)(3), following the designer's recommendations for inspection and maintenance, as well as any State or local regulations.***
>
> ***c. Design engineer: The design engineer is responsible for defining the needs of the client, investigating the site, designing the system, overseeing construction, and recommending operation and maintenance practices at an appropriate level of professional practice. In order to assure proper functioning of the engineered systems under expected conditions, the design engineer should consider relevant factors, including, but not by way of limitation, peak effluent levels, minimum recharge, deep frost and power failure.***

L'échantillonnage de système n'apparait pas être de pratique courante et relève plutôt du processus d'approbation de systèmes expérimentaux.

4.10 RESTRICTIONS : Restrictions quant à la localisation des installations septiques

Les distances séparatrices sont réglementées de la façon illustrée aux tableaux suivants. Ceux-ci distinguent les distances applicables aux composantes étanches et non étanches en fonction du débit de conception. Une importante adaptation est incluse dans la réglementation à l'effet que les systèmes desservant de nouvelles constructions diffèrent de celle visant le remplacement d'une installation existante.

TABLE 7B
Setback distances for first-time systems

Site features vs. disposal system components of various sizes	Disposal Fields (total design flow)			Treatment Tanks (total design flow)		
	Less than 1,000 gpd	**1,000 to less than 2,000 gpd**	**~~Over~~ 2,000 gpd or more**	**Less than 1,000 gpd**	**1,000 to less than 2,000 gpd**	**~~Over~~ 2,000 gpd or more**
Wells with water usage of 2000 or more gpd or public water system wells	300 feet	300 feet	300 feet	150 feet	150 feet	150 feet
Potable Water Supply	100 feet [a]	200 feet	300 feet	50 feet	100 feet	100 feet
Water supply line	10 feet	~~18~~ 20 feet	25 feet	10 feet	10 feet	10 feet
Water body/course, major [f] [h]	100 feet [c]	200 feet [c]	300 feet [c]	100 feet [d]	100 feet [d]	100 feet [d]
Water body/course, minor [e]	50 feet [e]	100 feet [e]	150 feet	50 feet ~~[d]~~	50 feet ~~[d]~~	50 feet ~~[d]~~
Drainage ditches	25 feet	50 feet	75 feet	25 feet	25 feet	25 feet
~~Edge of fill extension – Coastal wetlands, wetlands of special significance, significant vernal pools~~	~~25 feet~~	~~25 feet~~	~~25 feet~~	~~25 feet~~	~~25 feet~~	~~25 feet~~
Slopes greater than 3:1	10 feet [f]	18 feet [f]	25 feet [f]	N/A	N/A	N/A
No full basement [e.g. slab, columns, posts]	15 feet	28 feet	40 feet	8 feet	14 feet	20 feet
Full basement [below grade foundation, frost walls~~, columns~~]	20 feet [g]	30 feet	40 feet	8 feet	14 feet	20 feet
Property lines	10 feet [b]	18 feet [b]	20 feet [b]	10 feet	15 feet	20 feet
Burial sites or graveyard boundaries, measured from the toe of the fill extension	25 feet	25 feet	25 feet	25 feet	25 feet	25 feet
Stormwater infiltration systems	100 feet	200 feet	300 feet	100 feet	100 feet	100 feet
Wetponds, retention ponds, and detention basins (excavated below grade); Soil filters, underdrained swales, underdrained outlets, and similar structures	50 feet [i]	100 feet [i]	150 feet [i]	50 feet [i]	50 feet [i]	50 feet [i]
Stormwater detention basins (basin bottom at or above predevelopment grade)	25 feet	50 feet [i]	75 feet [i]	25 feet	25 feet	25 feet

TABLE 8A
Setback Distances for Replacement System, Limits of LPI Authority

Site features vs. disposal system components of various sizes	Disposal Fields (total design flow)			Septic Tanks and Holding Tanks (total design flow)		
	Less than 1,000 gpd	1,000 to 2,000 gpd	Over 2,000 gpd	Less than 1,000 gpd	1,000 to 2,000 gpd	Over 2,000 gpd
Wells with water usage of 2,000 or more gpd or public water supply wells	300 feet	300 feet	300 feet	150 feet	150 feet	150 feet
Potable supply well	100 down to 60 feet	200 down to 100 feet	300 down to 150 feet	~~100~~ 50 down to 25 feet	100 down to 50 feet	100 down to 50 feet
Water supply line	10 feet	20 feet	25 feet	10 feet	10 feet	10 feet
Water course, major [c]	100 down to 50 feet	200 down to 120 feet	300 down to 180 feet	100 down to 25 feet [a]	100 down to 50 feet	100 down to 50 feet
Water course, minor [c]	50 down to 25~~0~~ feet	100 down to 50 feet	150 down to 75 feet	50 down to 25 feet	50 down to 25 feet	50 down to 25 feet
Drainage ditches	25 down to 12 feet	50 down to 25 feet	75 down to 35 feet	25 down to 12 feet	25 down to 12 feet	25 down to 12 feet
Edge of fill extension-- Coastal wetlands, special freshwater wetlands, great ponds, rivers, streams	20 feet	25 feet	25 feet	25 feet	25 feet	25 feet
Slopes greater than 3:1	10 feet	18 feet	25 feet	N/A	N/A	N/A
No full basement [e.g. slab, columns, posts]	15 down to 7 feet	30 down to 15 feet	40 down to 20 feet	8 down to 5 feet	14 down to 7 feet	20 down to 10 feet
Full basement [below grade foundation, frost wall, ~~columns~~]	20 down to 10 feet	30 down to 15 feet	40 down to 20 feet	8 down to 5 feet	14 down to 7 feet	20 down to 10 feet
Property lines	10 down to 5 feet [b]	18 down to 9 feet [b]	20 ft down to 10 ft [b]	10 down to 4 feet [b]	15 down to 7 feet [b]	20 down to 10 feet [b]
Burial sites or graveyards boundaries, measured from the toe of the fill extension	25 feet	25 feet	25 feet	25 feet	25 feet	25 feet
Stormwater infiltration systems	100 down to 60 feet	200 down to 120 feet	300 down to 180 feet	100 down to 50 feet	100 down to 50 feet	100 down to 50 feet
Wetponds, retention ponds, and detention basins (excavated below grade); Soil filters, underdrained swales, underdrained outlets, and similar structures	50 down to 25 feet [d]	100 down to 50 feet [d]	150 down to 75 feet [d]	50 down to 25 feet [d]	50 down to 25 feet [d]	50 down to 25 feet [d]
Stormwater detention basins (basin bottom at, or above, predevelopment grade)	25 down to 12 feet	50 down to 25 feet [d]	75 down to 35 feet [d]	25 down to 12 feet	25 down to 12 feet	25 down to 12 feet

Les sections 7 et 8 du règlement méritent ainsi à elles seules d'être lues en entier puisque elles contiennent de nombreuse exceptions possible en surplus des tableaux de base. Notamment un processus de dérogation est également inclus pour permettre de palier à une incapacité de respecter ces normes.

On y intègre par exemple un concept lié au gain environnemental du remplacement d'installations défectueuses qui permet de justifier sous certaines conditions le positionnement dérogatoire d'une installation par rapport à un puits dans la mesure où celle-ci n'augmente pas la situation d'empiétement dans l'aire de protection par rapport à l'installation existante.

> ***SECTION 8 - REPLACEMENT SYSTEMS***
>
> ***B. SETBACKS AND SITING FOR REPLACEMENT DISPOSAL SYSTEMS***

3. If a site evaluator determines that it is not possible to install a replacement disposal system, pursuant to Section 8(A)(4) and Table 8A, the site evaluator must document the existing setbacks from the treatment tank and disposal area to the subject well. A replacement system may be designed and installed which does not reduce the existing system's setbacks from the treatment tank and disposal area to the subject well.

4.11 MILIEUX SENSIBLES :

La réglementation inclut à la section 12 plusieurs mesures de protection des milieux hydriques limitant le déboisement et l'altération des lieux dans une zone tampon mesurée à partir de la ligne des hautes eaux et tenant également compte de la présence de pentes fortes le cas échéant.

> ***SECTION 12 - DISPOSAL SYSTEM INSTALLATIONS ADJACENT TO WETLANDS AND WATER BODIES***
>
> ***B. INSTALLATION STANDARDS***
>
> ***1. Minimum standards for work adjacent to water bodies/courses requiring a 75-foot disturbance free buffer:***
>
> ***All ground disturbance or clearing of woody vegetation necessary for the installation of a subsurface wastewater disposal area must maintain a minimum setback of 75 feet from the normal high water mark of the following water bodies/courses except as allowed in Section 12(A)(1)(b):***
>
> ***a) Tidal Waters***
>
> ***b) Coastal Wetlands***
>
> ***c) Great Ponds***
>
> ***d) Rivers***
>
> ***e) Streams and outlets of Great Ponds***
>
> ***f) Non-Forested Wetlands of 10 acres or more including wetlands adjacent to ponds if the wetlands and pond total 10 acres or more in size***
>
> ***g) All water courses located inside the Shoreland Zone or equivalent LUPC district (this is the only***
>
> ***"Minor" water course that requires a 75-foot disturbance free buffer, and only when located inside the Shoreland Zone)***
>
> ***All work must comply with these Rules pertaining to work adjacent to or within wetlands and water bodies including Sections 12(B)(4) and 12(C).***
>
> ***2. Minimum standards for work adjacent to water bodies/courses requiring a 25-foot disturbance free buffer:***
>
> ***All ground disturbance or clearing of woody vegetation necessary for the installation of a subsurface wastewater disposal area must maintain a minimum setback of 25 feet from the normal high water mark of the following water bodies/courses except as allowed in Section 12(A)(1)(b):***
>
> ***(a) Water bodies less than 10 acres in size, including adjacent non-forested wetlands***

> ***(b) Water courses located outside the Shoreland Zone from the point where they become a water course to the point where they become a stream or major water body (perennial streams before they merge and become a "stream" as defined are the only "Major" waterbodies/courses that have a 25- foot disturbance free buffer, and only when located outside any shoreland zone).***
>
> ***(c) Wetlands consisting of or containing at least 20,000 square feet but not more than 10 acres in total, aquatic vegetation, emergent marsh vegetation, peat lands dominated by shrubs, sedges and sphagnum moss or open water outside the shoreland zone. All work must comply with these Rules pertaining to work adjacent to or within wetlands and water bodies including Sections 12(B)(4) and 12(C).***
>
> ***[...]***
>
> ***5. Steep slopes: For sites with sustained slopes steeper than three feet horizontal to one foot vertical (33 percent) within 25 feet from a protected natural resource. If a sustained slope of 33 percent or greater exists less than 25 feet from a protected natural resource, it does not count toward the 25-foot setback. Sustained slopes greater than 3:1 may be part of the 75-foot setback, but cannot be counted as part of the 25-foot setback.***

Le même chapitre spécifie également des mesures de contrôle des sédiments et de l'érosion applicables près des milieux hydriques.

> ***C. EROSION CONTROL***
>
> ***1. Erosion and sediment control measures: Erosion and sediment control measures must be in accordance with the March 2003 edition of the Maine DEP Handbook "Maine Erosion and Sediment Control BMPS" (DEPLW0588),***
>
> ***2. Erosion control barriers: Prior to the start of a soil disturbance activity, erosion control measures such as staked hay bales, silt fence or erosion control mulch berms must be properly installed and maintained for the duration of the project, to prevent sedimentation of the resource. Silt fence installed within a wetland shall not be trenched but shall have the fabric anchored down by placing stone on it.***
>
> ***3. Runoff Diverted: Upland surface water runoff must be diverted around all soil disturbance activities.***
>
> ***4. Temporary erosion control measures: Mulch or other temporary erosion control measures must be applied within 7 days of exposing the soil or prior to any storm event and must be maintained until site work commences again or until permanent stabilization measures are applied.***

> ***5. Time Limit: All soil disturbance activities must be stabilized as soon as practical, upon activity completion.***
>
> ***6. Wetland and Buffer Area Disturbance: Wetland and/or buffer vegetation must not be destroyed or permanently removed, unless authorized by these Rules. If unauthorized wetland vegetation is disturbed during the project, it must be re-established immediately upon completion of the work and must be maintained. This standard does not apply to fill or disposal areas required for replacement of wastewater disposal systems.***

Les terrains en pente moyenne à forte font l'objet d'une limitation générale d'installation.

> ***SECTION 4 -DESIGN CRITERIA***
>
> ***A. SITE EVALUATION REQUIREMENTS***
>
> ***7. Slope: The slope beneath a disposal field must not exceed 20 percent, interpreted as constant/average slope, unless approved by variance by the Department). The fill extension must reach the existing ground before an existing ground slope of 3:1 (33 percent) or greater, or within 100 feet horizontal distance of the disposal field.***

4.12 TOILETTES : Toilettes à compost, toilettes chimiques et toilettes à incinération

La réglementation prévoit un encadrement assez général et minimal des toilettes « alternatives ». On ne réfère notamment pas à la norme NSF-41 pour les toilettes à compost :

> ***SECTION 4 - DESIGN CRITERIA***
>
> ***M. ALTERNATIVE TOILETS***
>
> ***1. General: "Alternative toilets" may be used for the collection and treatment of human excreta, provided such toilets comply with the provisions of this Section.***
>
> ***(a) Permits required: Permits are required for all alternative toilet installations, excluding portable alternative toilets.***
>
> ***(b) Types of alternative toilets: Alternative toilets include chemical toilets and privies, composting toilets which discharge leachate, incineration toilets, pit privies, and vault privies. Temporary portable toilets are not alternative toilets and shall not be used as permanent alternative toilets (see definitions).***
>
> ***(c) Site evaluation not required: In the case of an alternative toilet that does not discharge human excreta directly onto or into the soil, a site evaluation is not required for design of the alternative toilet.***
>
> ***(d) Required setbacks must be maintained as applicable. For example, a pit privy must maintain setbacks for disposal fields, while a vault privy must meet treatment tank setbacks, except for setbacks to structures where the privy is located in or attached to a structure. All work adjacent to water bodies/courses which require soil disturbance or vegetation clearing must meet the applicable setback requirements in Section 12.***
>
> ***2. Disposal of contents: The contents of an alternative toilet must be removed and disposed of in a legal and sanitary manner whenever they reach the recommended capacity of the alternative toilet.***
>
> ***3. Non-discharging toilets providing treatment and stabilization: Only non-discharging toilets that do not use water carriage, but that do provide treatment or stabilization of the wastes, may be approved for permanent on-site use. All alternative toilets must meet the requirements of this Section in addition to specific requirements that apply to each type of alternative toilet.***
>
> ***(a) Insects and vermin: The design and installation of all alternative toilets must prevent access by insects and vermin. Each toilet area must have a fly-tight, self-closing door and a self-closing toilet seat cover.***
>
> ***(b) Venting: All vents must either be gas tight or operate by means of natural convection to keep odors from the structure within which the vents function.***

> ***Mechanical vents to the outside atmosphere must be screened to prevent insects and vermin from entering.***

4.13 PERMÉABILITÉ DU SOL :

Le règlement ne prévoit pas de méthodologie pour caractériser la perméabilité des sols avec précision dans le cadre du choix d'un type d'installation. Dans les faits, la démarche prévue consiste essentiellement à déterminer par des sondages le type de dépôts en présence en fonction de la charte du tableau 4D. La technique utilisée n'est pas prescrite par le règlement. On en comprend donc qu'il en est remis au professionnel d'utiliser la façon qu'il juge appropriée afin de s'assurer de qualifier le sol dans la bonne plage. Le profil de sol déterminé permet ainsi d'obtenir le « Sizing factor », c'est-à-dire le multiplicateur par lequel l'élément épurateur doit être surdimensionné en fonction de la capacité épuratoire du matériel. La catégorie imposant le plus grand surdimensionnement au tableau est le dépôt marin de silt-limon et d'argile-limon (profile 9). En recoupant ces catégories au triangle de corrélation, on constate que ces types de sols sont assimilable à des sols « peu perméables ». Les différents types d'argile n'apparaissent pas et sont donc d'emblé assimilées à des couches limitatives en référence au tableau 4E.

TABLE 4D DISPOSAL FIELD SIZING

Parent Material	Profile	Description	Sizing Factor
Lodgment (Basal) Glacial Till	1	Silt loam textured soils throughout the entire profile. The lower horizons usually have prismatic or platy structures. This profile tends to become firm dense and impervious with depth thus this profile may have a hydraulically restrictive horizon. Angular rock fragments are usually present. Occasionally cobbles and stones may be present.	**4.1 S.F. Large**
Ablation Glacial Till	2	Loam to sandy loam textured soils throughout the entire profile. This profile does not have a hydraulically restrictive horizon. Angular rock fragments are present. Occasionally cobbles and stones may be present.	**3.3 S.F. Med. Large**
Lodgment (Basal) Glacial Till	3	Loam to loamy sand textured soils throughout the entire profile. The lower soil horizons usually have well defined prismatic or platy structures that are very compact and are difficult to excavate. These lower horizons are considered hydraulically restrictive. Angular rock fragments are present. Occasionally cobbles and stones are present.	**3.3 S.F. Med. Large**
Ablation Glacial Till	4	Sandy loam to loamy sand textured upper horizon(s) overlying loamy sand textured lower horizon. This profile tends to be loose and easy to excavate. Lower horizons tend not to be firm and are not considered hydraulically restrictive. Angular rock fragments are present along with partially water-worn cobbles and stones	**2.6 S.F. Medium**
Stratified Glacial Drift	5	Loam to loamy sand textured upper horizons overlying fine and medium sand parent materials. Stratified horizons of water-sorted materials may be present. Lower horizons tend to be granular or massive. Entire profile tends to be loose except that saturated horizons may be cemented and therefore firm and are considered hydraulically restrictive. Horizons with rounded rock fragments are common.	**2.6 S.F. Medium**
Stratified Glacial Drift	6	Loamy sand to sand textured upper horizons overlying stratified coarse sands or gravel parent materials. Stratified horizons of water-sorted materials may be present. Entire profile tends to be loose except that saturated horizons may be cemented and therefore firm and are considered hydraulically restrictive. Horizons with rounded rock fragments are common.	**2.6 S.F. Medium**
Mixed geological origins	7	Fifteen (15) or more inches of sandy loam to loamy sand glacial till or loamy sand to sand stratified drift parent material overlying marine or lacustrine deposited silt to silty clay or fifteen (15) or more inches of loamy sand to sand stratified drift parent material overlying firm basal till. The upper horizons tend to be granular in structure. The lower horizons tend to be firm and massive in structure and are considered to be hydraulically restrictive. Rock fragments may be present in upper horizons but are usually absent in lower horizons, except for basal till.	**3.3 S.F. M. Large**
Lacus-trine deposits	8	Loam to fine sandy loam upper horizon(s) overlying firm silt loam to silt textured lower horizons. The upper horizons tend to be granular in structure. The lower horizons tend to be firm and massive in structure and are considered to be hydraulically restrictive. Stratified lenses of fine sand and sandy loam may be present in the lower horizons. Coarse rocks are usually absent throughout entire profile.	**4.1 S.F. Large**
Marine deposits	9	Silt loam textured upper horizons overlying firm silt loam to silty clay textured lower horizons. The lower horizons tend to be very firm and are considered to be hydraulically restrictive. Coarse rock are usually absent throughout entire profile. Thin lenses of very fine sand to silt may be present in the lower horizons	**5.0 S.F. EX. Large**
Organic deposits	10	Partially decomposed organic material at least 16" in thickness.	**Not Permitted**
Alluvial dune beach deposits	11	These soils have no typical profile. Variable in texture and exhibit very little weathering. They are deposited in flood plains sand dunes or beach environments.	**Best Fit**
Filled Site	12	These soils have no typical profile. Variable in texture. May contain man-made materials.	**Best Fit**

L'épaisseur du dépôt évalué est quant à lui recoupé avec le tableau 4E à la page suivante.

TABLE 4E SOIL CONDITION

Limiting Factor Depth, in inches	Bedrock Limiting Factor Condition	Soil Drainage Limiting Factor or Restrictive Layer Condition
> 48		B
15 to 48	AIII	C
9 to <15	AII	D
<9	AI	E

La combinaison de ces données permet d'identifier par le tableau 4F l'épaisseur de la couche d'infiltration à avoir entre l'élément épurateur et la couche limitative. L'ensemble de cet exercice permet donc essentiellement de déterminer si un système d'infiltration est possible ou non selon la contrainte de sol sans distinction du type de système d'infiltration à préconiser.

Le tableau 4F identifie trois scénarios possibles. Les solutions pour une nouvelle construction ou l'agrandissement d'une installation à plus de 250 pieds d'un plan d'eau, celles pour le même type de projet à moins de 250 pieds d'un plan d'eau, et enfin les solutions pour un système de remplacement. Une nouvelle construction riveraine devra donc avoir une couche d'infiltration plus propice que dans le cas du remplacement d'une installation existante, plus permissive pour le même système.

La possibilité de recourir à du matériel de remblai (profile 12 - filled site) au besoin apparait rendre l'éventualité de devoir composer en présence d'un sol imperméable quasi inapplicable.

L'infiltration est favorisée par rapport aux fosses de rétention. L'utilisation doit être rendue nécessaire en l'absence de solutions techniquement applicable mais également avec une notion très subjective de « coûts extraordinaires » des autres solutions.

3. REQUIREMENTS FOR APPROVAL

(a) LPI Approval: The LPI may approve the permanent use of a holding tank under the following conditions:

i. Required by other regulation: A local ordinance or Private and Special Law requires that a holding tank be used for wastewater, or

ii. First-Time System: The Municipality has adopted the model holding tank ordinance in these Rules for first-time systems; and

iii. No practical alternative: Due to site conditions, lot configuration, or other constraints, the installation of a system, in full compliance with these Rules, is not achievable without the employment of extraordinary measures or extraordinary cost; and

iv. Public sewers not available: Public sewers and/or multi-user systems are, by practical means, not immediately available; and

v. Water conservation: The plumbing in the structure will be modified for maximum water conservation, and all water closets must meet or exceed ASME A112.19.2 for 1.6 gallons per flush.

vi. Deed Covenant: A deed covenant (HHE-300) is required for any residential structure served by a holding tank. At a minimum, the covenant must include a statement that a holding tank is serving the structure for the disposal of human sewage and wastewater. The aforementioned statement must be a separate stand-alone section or paragraph.

TABLE 4F MINIMUM PERMITTING CONDITIONS

AND MINIMUM DESIGN REQUIREMENTS

NOTE: "NOT ALLOWED" INDICATES A DISPOSAL FIELD IS NOT ALLOWED.

First Time & Expanded Systems Outside of the Shoreland Area: Separation in Inches								
Soil Profile ↓	Soil Condition →	AI	AII	AIII	B	C	D	E
1, 2, 3, 4, 7, 8, 9		Variance Required: Minor Expansions; ~~Not Allowed for 1st Time~~[d] 24	24	24	12	12	18	Variance Required: Minor Expansions; ~~Not Allowed for 1st Time~~ [d] 24
5,6		Variance Required: Minor Expansions; ~~Not Allowed for 1st Time~~ [d] 24	24	24	24	24	24	Variance Required: Minor Expansions; ~~Not Allowed for 1st Time~~ [d] 24
10		Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed
11, 12		Use Tables 4D and 4E to determine the soil profile and description which best describes the observed conditions.						
First Time & Expanded Systems Within the Shoreland Area: Separation in Inches								
Soil Profile ↓	Soil Condition →	AI	AII	AIII	B	C	D	E
1, 2, 3, 4, 7, 8, 9		Not Allowed	Variance Required: Minor Expansion [f] 24~~Not Allowed~~	24	12	12	Variance Required [c,e] 18	Not Allowed
5,6		Not Allowed	~~Not Allowed~~ Variance Required: Minor Expansion [f] 24	24	24	24	Variance Required [c,e] 24	Not Allowed
10		Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed
11, 12		Use Tables 4D and 4E to determine the soil profile and description which best describes the observed conditions.						
Replacement Systems: Separation Distances in Inches								
Soil Profile ↓	Soil Condition →	AI	AII	AIII	B	C	D	E
1, 2, 3, 4, 7, 8, 9		24 [a]	24 [b]	24	12	12	18 [b]	24 [a]
5,6		24 [a]	24 [b]	24	24	24	~~18~~ 24 [b]	24 [a]
10		24 [a]	24 [a]	24 [a]	24 [a]	24 [a]	24 [a]	24 [a]
11, 12		Use Tables 4D and 4E to determine the soil profile and description which best describes the observed conditions and Table 4F for required separation distances and approval criteria.						

4.14 FORTES CONTRAINTES : Solutions pour les sites à fortes contraintes

Une partie importante de l'encadrement du règlement réside dans l'utilisation de demandes d'assouplissement principalement pour les résidences existantes.

> ***SECTION 8 - REPLACEMENT SYSTEMS***
>
> ***B. SETBACKS AND SITING FOR REPLACEMENT DISPOSAL SYSTEMS***
>
> ***1. Setback Reductions Between Replacement Disposal Systems and Site Features other than Private Potable Water Supplies Authorized by the LPI: If a site evaluator determines that it is impractical to install a replacement disposal system in accordance with setbacks, as set forth in Table 8A, approval from the Department is required. The LPI may request assistance from the Department regarding the review and approval of any replacement system variance request.***
>
> ***2. Additional Setback Reductions Between Replacement Disposal Systems and a Private Potable Water Supply which may be Authorized by the Department: If a site evaluator determines that it is impractical to install a replacement disposal system in accordance with the setbacks authorized by the LPI, according to Table 8A, from a potable water supply, the Department may authorize additional setback reductions, on a site specific, case-by-case basis, provided that there is no practical alternative, and reductions are minimized.***
>
> ***3. If a site evaluator determines that it is not possible to install a replacement disposal system, pursuant to Table 8A, the site evaluator must document the existing setbacks from the treatment tank and disposal area to the subject well. A replacement system may be designed and installed which does not reduce the existing system's setbacks from the treatment tank and disposal area to the subject well.***

Le mécanisme de dérogation apporte également quant à lui une souplesse lorsque les situations ne s'inscrivent pas à l'intérieur du cadre prévu. La gestion se fait au niveau local pour certaines catégories de dérogation alors que l'État voit à statuer sur la dérogation des autres situations plus à risque. À titre d'exemple, un LPI ne peut statuer sur une demande de dérogation en référence à des conditions de sol inappropriées contrairement à l'État.

> ***D. LPI'S AUTHORITY***
>
> ***1. Replacement System Variance Requests may be decided upon by the LPI, without Department review, if the following conditions are met:***
>
> ***(a) Standard conditions: All of the conditions of Section 8.B are met; and***
>
> ***(b) Minimum soil conditions: Reductions in minimum soil conditions are no greater than allowed in Table 4F; and***

> ***(c) Fill extension slope: The fill extension slope is no greater than 3:1 or 33 percent; and***
>
> ***(d) Wastewater strength: The BOD5 plus suspended solids content of the wastewater is no greater than that of normal domestic effluent.***

> ***E. DISPOSITION OF A VARIANCE BY THE DEPARTMENT***
>
> ***1. Replacement System Variance Requests which are beyond the LPI's limit of authority must be submitted to the Department for review and disposition. They must meet the following conditions:***
>
> ***(a) Standard conditions: All of the conditions of Section 8(B) are met; and***
>
> ***(b) LPI signature: The completed application, including HHE-204 or HHE-233 form, has been reviewed and signed by the LPI; and***
>
> ***(c) Flexibility: The Department may be as flexible as is necessary to correct an existing, public health hazard.***
>
> ***2. General: The Department may approve a variance, deny it, or approve it with conditions. The disposition of the variance request will be in writing and state the specifications and conditions of any approval or the reasons for denial. The conditions may include deed covenants, inspections and mandatory installation of a holding tank if the system fails in the future. The disposition of the variance request comprises authorization for the LPI to issue a permit for the subject system design, if approved; or prohibition for the LPI to issue a permit for the subject system design if denied.***

Le règlement n'apparait pas adresser de façon spécifique les solutions en conditions de sol impropre à l'infiltration puisqu'il semble être de pratique dans ces situation d'utiliser un matériel de remblai approprié. Les types de systèmes sont ainsi conçus en tenant compte de facteurs de dimensionnement propre à cette catégorie de « sol ». Par l'effet du temps, sous certaines conditions, un vieux remblai peut éventuellement même être considéré à titre de sol naturel pour fin de dimensionnement. On comprend donc le peu d'encadrement pour des technologies de traitement très avancées qui sont à toute fin pratique rendue inutiles par la possibilité d'altérer des conditions de sol impropre pour les rendre propice à l'installation de systèmes de gammes conventionnelles.

> ***SECTION 4 - DESIGN CRITERIA***
>
> ***B. SOIL PROFILE DESCRIPTIONS***
>
> ***4. Filled sites: Where the surface of the ground has been raised by the addition of fill material over the original soil, the disposal field sizing factor is to be***

determined according to the closest matching soil profile in Table 4E. If the fill is less than 4 feet in thickness, the sizing factor is to be based upon the texture of fill or on the original soil, whichever is finer, and the depth to the most limiting soil horizon. Measurements of depths of soil layers and limiting factors are to be taken from the original ground surface except as provided for in Section 4(B)(5). If the requirements of 4(Q)(7) are satisfied, the disposal area may be sized as described in 4(Q)(7).

5. Fill considered equivalent to original soil outside the Shoreland Area: The LPI must review and approve the use of existing fill soil as the equivalent to original soil for design purposes when the site evaluator demonstrates that:

(a) The fill was placed on the site no later than October 31, 1995;

(b) The fill material is of suitable texture, consistency, depth, extent and structure to be equivalent on original soil for design purposes, as demonstrated by soil test pit logs sufficient in number to be representative of the disposal field and fill extensions; and,

(c) The area of the fill soils include, at a minimum, the disposal field and its extensions; and

(d) The texture of fill is sandy loam or coarser, and the fill is relatively free of foreign material including organic material; and,

(e) The fill was placed in compliance with all pertinent regulations.

6. Fill considered equivalent to original soil inside the Shoreland Area: The Department shall review and approve the use of existing fill soil as the equivalent to original soil for design purposes when the site evaluator demonstrates that:

(a) The fill has been in place since July 1, 1974, and (b) The fill material is of suitable texture, consistency, depth, extent and structure to be equivalent of original soil for design purposes, as demonstrated by soil test pit logs sufficient in number to be representative of the disposal field and fill extensions; and,

(c) The area of the fill soils include, at a minimum, the disposal field and its extensions; and (d) The texture of fill is sandy loam or coarser, and the fill is relatively free of foreign material including organic material; and, (e) The fill was placed in compliance with all pertinent regulations.

4.15 ÉTUDES : Études préalables et mise aux normes

Le processus de demande de permis requiert qu'une évaluation du site soit réalisée par un professionnel accrédité par l'État à titre de « site evaluator ». Le professionnel est également signataire de la demande de permis.

La demande doit contenir la localisation du projet, le débit de conception, l'analyse du sol, le manuel d'entretiens et les plans du projet.

> ***SECTION 3 - DISPOSAL SYSTEM PERMITS AND FEES***
>
> ***A. PERMIT REQUIRED***
>
> ***2. Application for disposal system permit form: An application for a disposal system permit shall be made on forms provided or approved by the Department. Permit applications must be prepared by a licensed site evaluator for nonengineered systems, or a professional engineer or a licensed site evaluator for engineered systems and require a site evaluation, with the exception of replacement septic tanks and alternative toilets, other than pit privies. Such application must include an adequate description of the proposed work. See Section 4.***

Le règlement prévoit les différents travaux qui peuvent bénéficier d'une exemption de permis.

> ***SECTION 2 - ADMINISTRATION***
>
> ***F. REPAIRS AND MAINTENANCE***
>
> ***1. Disposal system permit not required: A disposal system permit is not required for minor repairs or replacements made, as needed, for the operation of pumps, siphons, aerobic treatment units, sand filters, or accessory equipment, the clearance of a stoppage in the building sewer which does not require excavation and/or exposure of system components or sealing of a leak in the septic tank, holding tank, pump tank, or building sewer.***
>
> ***2. Disposal area modification, repair or alteration: Excavations to modify, repair or alter a disposal area, other than the addition of fill, requires a permit. If a permit is required, such modification, repair or alteration must meet all applicable sections of these rules and must be considered a disposal area for permitting purposes. The addition of fill without a permit must meet all requirements of these Rules.***

Le libellé du règlement prévoit qu'une installation doit être exploitée selon ses débits de conception. On peut donc en comprendre que l'augmentation de sa capacité d'exploitation doit faire l'objet d'une mise aux normes selon la procédure courante.

> ***SECTION 2 - ADMINISTRATION***
>
> ***E. EXISTING SYSTEMS***
>
> ***1. Continued use: The continued use of any subsurface wastewater disposal system, is allowed, provided all of the following conditions are met:***
>
> ***(a) Wastewater flow: The current wastewater flow is equal to, or less than, the design flow at the time of system installation and as allowed in Section 9; and***
>
> ***(b) System Status: The system is not currently malfunctioning.;***

La section 9 du règlement encadre la procédure d'augmentation de la capacité d'exploitation d'un ouvrage. On y retrouve notamment une particularité à l'effet que l'ajout d'une chambre à coucher permet d'appliquer les assouplissements de mise aux normes concernant le remplacement de système existants mais que l'ajout de plus d'une chambre à coucher impose une mise aux normes en fonction des critères plus sévères d'installation équivalent à un système pour une nouvelle construction.

> ***C. DESIGN CRITERIA FOR EXPANDED SYSTEMS***
>
> ***1. Design criteria for expanded systems: The design criteria required for expanded systems is as follows:***
>
> ***(a) Outside the shoreland area:***
>
> ***i. Minor Expansion: For the addition of one of the following - One bedroom, maximum wastewater flow increase of 25 percent for non-residential structures, pressurized water introduced to structure, replacement of an alternative toilet with a water closet, or an upgrade of the holding tank to a complete system occurs, then the expansion must meet replacement system criteria, as described in Section 8;***
>
> ***ii. Major Expansion: If there is an addition of more than one of the items listed above, or there is an increase of wastewater flow greater than 25 percent for non-residential structures, then the expanded system must meet first-time system criteria, as described in Section 7.***
>
> ***(b) Within the shoreland area:***
>
> ***i. Minor Expansion: For the addition of one of the following - One bedroom maximum wastewater flow increase of 25 percent for non-residential structures, replacement of an alternative toilet with a water closet, or an upgrading of the***

holding tank to complete the system occurs, then the expansion must meet replacement system criteria to the LPI limits of approval only;

ii. Major Expansion: If the addition of more than 1 one of the items listed above occurs, and/or the addition of pressurized water to the structure occurs, or an increase of wastewater flow is greater than 25 percent for non-residential structures, then the expanded system must meet first-time system criteria as described in Section 7.

(b) In-law apartments: For the purpose of determining the appropriate design criteria in Sections 9(C)(1)(a) and (b) above, an in-law apartment, as defined in these Rules, are considered as one bedroom. The resulting system design must use the design flow of 120 gpd, as required by Table 4A.

4.16 AUTRES :

Éléments du Q-2, r.22 qui sont couverts par le territoire visé

Définitions	X
Hiérarchie du choix d'un système	
Obligation de vidange des fosses septiques	X
Méthodes pour établir la perméabilité du sol	
Plages de perméabilité	X
Référence aux normes BNQ/NSF	X
Normes de construction des fosses construites sur place	X
Préfiltre	X
Norme spécifique au déboisement (élément épurateur classique)	
Conduite d'amenée, raccordements et ventilation	X
Champ d'application du Règlement/type d'eau	X
Prohibition de rejeter des eaux usées	
Interdiction d'utiliser certains produits (désinfection de ces eaux usées)	X
Conditions d'émission des permis (plan, études, etc.)	X
Implication d'un professionnel compétent pour la conception (Ordre professionnels)	X
Désaffectation des systèmes	X
Gestion des boues et des autres résidus	X
Cheminement des eaux et des effluents	
Normes de localisation pour les systèmes étanches et les systèmes non étanches	X
Normes techniques à respecter (matériaux, dimensions, etc.)	X
Conditions d'implantation des systèmes (pente, perméabilité, épaisseur de sol naturel, etc.)	X
Obligation d'entretien et/ou de maintenir un contrat d'entretien des systèmes certifiés	X
Normes de rejet des systèmes	X
Systèmes spécifiquement pour des résidences/bâtiments existants	
Toilettes à compost	X
Cabinet/toilettes sèches	X
Solutions si ségrégation des eaux (toilettes vs eaux ménagères) (ex : vidange périodique)	
Déclencheurs/droits acquis pour la mise aux normes de systèmes existants	
Dispositions encadrant les rejets au fossé/cours d'eau	
Déphosphatation	
Désinfection	
Méthodes de prélèvement et d'analyse des rejets des systèmes	
Définit la responsabilité des municipalités pour l'application du Règlement	X
Amendes/infractions	
Dispositions applicables à des territoires particuliers (Basse-Côte-Nord Iles-de-la-Madeleine, etc.)	

Éléments couverts par le territoire visé et qui ne sont pas traités dans le Q-2, r.22

- Le « Chapter 242, 10-144, STATE OF MAINE, RULES FOR CONVERSION OF SEASONAL DWELLING UNITS INTO YEAR-ROUND RESIDENCES IN THE SHORELAND ZONE » encadre la conversion des résidences saisonnières en résidence principales dans les milieux riverains. La procédure requiert notamment une réévaluation du système existant pour tenir compte de l'augmentation du risque occasionné par une occupation plus intensive. (Summary)

- Le règlement de base prévoit quant à lui les modalités d'inspection obligatoire des travaux par le fonctionnaire désigné. (SECTION 11 - QUALITY ASSURANCE AND QUALITY CONTROL)

SOURCES Maine :

1. *State of Maine, Chapter 241 10-144, DEPARTMENT OF HEALTH & HUMAN SERVICES, MAINE CENTER FOR DISEASE CONTROL & PREVENTION, DIVISION OF ENVIRONMENTAL HEALTH, SUBSURFACE WASTEWATER DISPOSAL RULES, 2014*
2. *State of Maine, Chapter 242 10-144, DEPARTMENT OF HEALTH & HUMAN SERVICES, MAINE CENTER FOR DISEASE CONTROL & PREVENTION, DIVISION OF ENVIRONMENTAL HEALTH, RULES FOR CONVERSION OF SEASONAL DWELLING UNITS INTO YEAR-ROUND RESIDENCES IN THE SHORELAND ZONE, 2011*
3. *State of Maine, Chapter 243 10-144, DEPARTMENT OF HEALTH & HUMAN SERVICES, MAINE CENTER FOR DISEASE CONTROL & PREVENTION, DIVISION OF ENVIRONMENTAL HEALTH, MINIMUM LOT SIZE RULES, 2005*
4. *State of Maine, Chapter 245 10-144, DEPARTMENT OF HEALTH & HUMAN SERVICES, MAINE CENTER FOR DISEASE CONTROL & PREVENTION, DIVISION OF ENVIRONMENTAL HEALTH, RULES FOR SITE EVALUATORS OF SUBSURFACE WASTEWATER DISPOSAL SYSTEMS, 2006*
5. *State of Maine, DEPARTMENT OF HEALTH & HUMAN SERVICES, MAINE CENTER FOR DISEASE CONTROL & PREVENTION, DIVISION OF ENVIRONMENTAL HEALTH, Basic Subsurface Wastewater Disposal System Installation, 2009*
6. *Site internet officiel du* Department of Health and Human Services, Division of Environmental and Community Health, Maine Subsurface Wastewater Team, *https://www.maine.gov/dhhs/mecdc/environmental-health/plumb/index.htm*

5.0 MICHIGAN

5.1 ENCADREMENT :

Le gouvernement de l'État du Michigan est responsable, entre autres, de mettre en place le cadre normatif relatif au traitement des eaux usées des résidences et des bâtiments isolées. C'est le Département de l'Environnement, Grands Lacs et Énergie « Michigan Department of Environment, Great Lakes, and Energy » (EGLE) qui administre le programme « Onsite Wastewater Program »[5].

> ***The Onsite Wastewater Program is a required service for local health departments under Michigan's Public Health Code, Act 368 of 1978. The State of Michigan contracts annually with local health departments and provides contract oversight through the Michigan Local Public Health Accreditation Program.***
>
> ***Program elements for the EGLE Onsite Wastewater Program is to offer assistance and training to local health departments in the review and approval of:***
>
> - ***Land developments utilizing onsite wastewater systems.***
> - ***Large capacity onsite systems discharging up to 10,000 gallons per day.***

L'encadrement mis en place par l'État repose sur une Loi et un guide technique. Toutefois, l'adoption de deux projets de Lois est en cours (projets de Loi 5752 et 5753). Les projets de Loi ont été présentés au printemps 2018. L'objectif de ces projets de Loi est d'amender le « Public Health Code » de manière à mettre en place un cadre réglementaire plus détaillé et uniforme sur tout le territoire de l'État. Plusieurs intervenants dans le domaine des eaux usées (EGLE, DEQ, municipalités, associations, etc.) s'entendent sur le fait que cette situation doit évoluer vers la mise en place d'un cadre réglementaire plus contraignant. Ce processus est en cours depuis 2004[6]. Actuellement, il y a 12 comptés qui appliquent des règlements locaux désuets et plus ou moins élaborés au sujet du traitement des eaux usées résidentielles.

> ***Michigan is the only state without a statewide sanitary code…meaning it is left up to counties or townships to set standards. In Michigan, the public health code charges local health departments with developing and implementing codes regarding water wells and septic systems.*** [7]

[5] https://www.michigan.gov/egle/0,9429,7-135-3313_71618_51002---,00.html
[6] Whitepaper on the Statewide Code for On-site Wastewater Treatment, Governor Jennifer M. Granholm, Janvier 2004
[7] https://www.mymlsa.org/septic-system-ordinances/

Ceci-dit, le « Michigan Departement of Environment Quality (DEQ) » applique les documents suivants :

- La Loi « Public Health Code, Act 368 », à jour en décembre 2003, ci-après la Loi.
- Le guide « Michigan Criteria for On-Site Wastewater Treatment », à jour en janvier 2013, ci-après le guide.

Le guide technique « Michigan Criteria for On-Site Wastewater Treatment » a été mis sur pied par le « Michigan Department of Envrionment Quality » (DEQ) en avril 1994. Ce guide a été révisé le 29 janvier 2013.

L'adoption de ce guide s'inscrit dans le processus de modernisation du cadre législatif encadrant la gestion des eaux usées. Le guide vise à établir un cadre minimal pour les comptés afin que ceux-ci puissent, à leur tour, adopter une règlementation appropriée et moderne. Toutefois, actuellement, ce guide ne s'applique pas aux résidences unifamiliales ou bi-familiales isolées (bâtiments générant moins de 1000 g/jour (3785 L/jour)). Dans ce cas, les règlements locaux s'appliquent.

> ***1.3 Applicability***
>
> ***[…] The criteria also do not apply to private single and two family residential sewage systems constructed pursuant to LHD sanitary codes.***

De manière générale, le guide s'applique aux installations septiques conçues pour des débits de 0 à 20 000 gallons/jour, soit jusqu'à 75 708 L/jour.

> ***1.1 Administration***
>
> ***This document has been established as a guideline pursuant to the requirements of the Administrative Procedures Act, 1969 PA 306, as amended. Guideline as defined therein means "An agency statement or declaration of policy which the agency intends to follow, which does not have the force or effect of law, and which binds the agency but does not bind any other person." It is intended that "agency" as used above also includes local health departments, when acting as an agent of the DEQ. The revised criteria communicates a standard by which decisions for approval of systems utilizing subsurface dispersal are made resulting in authorization to discharge pursuant to Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), and the Part 22 Groundwater Quality Administrative Rules, being R 323.2201 et seq., promulgated pursuant to Part 31.***
>
> ***1.2 Purpose***

> ***The purpose of the criteria is to assure that the construction, operation and maintenance of on-site wastewater treatment systems utilizing soil dispersal in quantities of less than 20,000 gpd:***
>
> ***1. Are approved and constructed in a uniform manner consistent with the criteria.***
>
> ***2. Are routinely operated and maintained to assure proper treatment and function.***
>
> ***3. Will not contaminate any existing or future drinking water supply.***
>
> ***4. Will not give rise to a public health or safety hazard or present the potential for creating a hazard.***
>
> ***5. Will not contaminate groundwater or surface water.***
>
> ***6. Will not give rise to a nuisance (e.g. due to odor or unsightly appearance).***
>
> ***7. Will not otherwise violate laws or regulations governing water pollution or sewage disposal.***

Les exclusions suivantes sont prévues (guide, page 7).

> ***It should be noted that these criteria pertain to the treatment and soil dispersal of sanitary sewage (e.g. toilet wastes, sink and laundry waste, and bath water) or domestic equivalent wastewater. The treatment and soil dispersal of wastes from industrial and commercial processes (e.g. laundromats, car washes, floor drains, etc.) requires specific Part 22 authorization by the DEQ. The criteria also do not apply to private single and two family residential sewage systems constructed pursuant to LHD sanitary codes.***

5.2 TYPE D'EAU: Types d'eau visés par l'encadrement

De manière générale, le guide propose des dispositions qui se limitent aux eaux de nature domestique. Selon, le point 1.3, les eaux d'autre nature (salon de coiffure, lave-auto, industrie, drain de plancher, atelier de mécanique, etc.) doivent faire l'objet d'une autorisation de l'État. Les rejets d'adoucisseur ne doivent pas être dirigés vers la fosse septique mais le règlement ne prévoit pas comment les gérer.

> ***1.3 Applicability***
>
> ***[…]***
>
> ***It should be noted that these criteria pertain to the treatment and soil dispersal of sanitary sewage (e.g. toilet wastes, sink and laundry waste, and bath water) or domestic equivalent wastewater. The treatment and soil dispersal of wastes from industrial and commercial processes (e.g. laundromats, car washes, floor drains, etc.) requires specific Part 22 authorization by the DEQ. The criteria also do not apply to private single and two family residential sewage systems constructed pursuant to LHD sanitary codes.***

Malgré cette définition générale des eaux usées, le point 5.1 traite des eaux à charges élevées. Le guide recommande d'adapter la conception de manière à réaliser un traitement supplémentaire de l'effluent avant le dispositif d'infiltration.

> ***Chapter 5 – Wastewater Characterization***
>
> ***5.1 Waste Strength Assessment […]***
>
> ***System designs must account for concentrations of constituents that may be expected to exceed typical residential strength. The design must provide additional treatment which would be expected to produce effluent quality meeting required treatment objectives as referenced in section 8.2 prior to the soil dispersal component.***

Il n'y a pas d'autre disposition plus précise, par exemple, pour les broyeurs à déchets ou pour les adoucisseurs d'eau.

5.3 DENSITÉ MAXIMALE : Densité maximale des installations septiques

La Loi et le guide ne contiennent pas de disposition au sujet de la densité des installations ni de leur effet cumulatif. Toutefois, la densité des installations septique est encadrée, indirectement, par le « Michigan Administrative Code Part 4. Department of Environmental Quality On-Site Water Supply And Sewage Disposal For Land Divisions And Subdivisions ».

Ce document prévoit les modalités encadrant le développement de nouveaux lotissements sur l'ensemble du territoire, notamment la nécessité d'identifier une surface de remplacement en plus du terrain récepteur projeté sur un terrain à développer.

> ***R 560.403 Site reports; contents.***
>
> ***Rule 403. For a subdivision, the owner or designated representative shall submit 3 copies of a site report to the department. A site report shall include all of the following information:***
>
> ***(a) The name and location of proposed plat.***
>
> ***(b) The names and addresses of the proprietor of the preliminary plat and the licensed professional engineer or professional surveyor submitting the site report.***
>
> ***(c) A statement of intended use of the proposed plat, such as single-family, 2-family, and multiple residential housing; commercial; industrial; recreational; or agricultural.***
>
> ***(d) A statement of the type of water and sewage system to be provided.***
>
> ***(e) A statement of the existing use of adjacent property and intended use of adjacent undeveloped land, if known, including any adjacent public-owned lands.***
>
> ***(f) The results of all soil profile evaluations performed on the site.***
>
> ***(g) A statement of the site suitability for on-site water supply or on-site sewage disposal according to R 560.404 and R 560.416.***
>
> ***[…]***
>
> ***R 560.416 Approval for suitability of conventional on-site sewage treatment and disposal.***
>
> ***Rule 416. Before issuing an approval for the suitability of a conventional on-site sewage treatment and disposal system for a development site less than 1 acre in size or a subdivision, the department shall have evidence that site conditions meet these rules.***
>
> ***R 560.417 Soil absorption area for conventional treatment and disposal systems.***
>
> ***Rule 417. (1) A suitable absorption area for at least 1 original and 1 replacement system shall exist for each development site less than 1 acre in size or each lot where a conventional treatment and disposal system is proposed. Location of***

> ***each absorption area shall conform to the minimum isolation distances found in Table 2.***

5.4 REJETS : Rejets en surface

Selon le document d'appel d'offres, ce sujet n'est pas traité pour cet État.

5.5 CONTAMINANTS : Contaminants encadrés

Le guide contient des recommandations sur les contaminants tels que : DBO5, MES, huile et graisse, azote, phosphore, etc.). Les contaminants encadrés sont illustrés au tableau 5.1 du guide selon les paramètres attendus à l'entrée et à la sortie de la fosse septique.

> ***Chapter 5 – Wastewater Characterization***
>
> ***5.1 Waste Strength Assessment***
>
> ***Hydraulic performance, treatment performance, and longevity of a subsurface wastewater treatment system can be drastically affected by the wastewater composition. The strength of raw wastewater should be characterized for Biochemical Oxygen Demand (BOD5), Total Suspended Solids (TSS), Fats, Oils and Grease (FOG) and total nitrogen (TKN) (e.g. waste strength = BOD + TSS + FOG + TKN). Values for ammonia (nh4) and total phosphorous (tp) are also presented for reference.***
>
> ***Typical values for influent wastewater and filtered primary septic tank effluent (FP) produced by residential dwellings are assumed to fall within those shown in Table 5.1 and need not be assessed further. Likewise, sanitary wastewater discharges from facilities without a process water component (e.g. retail, office space, manufacturing, etc.) would also be presumed to have strength falling within these values.***
>
> **Table 5.1**
> **Residential Wastewater Strength**
>
> | Residential Wastewater | Influent Strength[1] | Typical FP[2] |
> |---|---|---|
> | BOD5 | 155 – 286 mg/l | 100-140 mg/l |
> | TSS | 155 – 330 mg/l | 20-55 mg/l |
> | FOG | 70 – 105 mg/l | 10-20 mg/l |
> | TKN | 26-75 mg/l | 50-90 mg/l |
> | NH_4 | 4-13 mg/l | 30-50 mg/l |
> | TP | 6-12 mg/l | 12-20 mg/l |
>
> [1]Source: EPA On-site Wastewater EPA/625/R-00/008
> [2]Source: Crites Tchobanoglous, 1998 Small and Decentralized Wastewater Management Systems

De plus, le tableau 8.2, à la page suivante, contient des recommandations de performance, un peu comme l'approche de performance du RETEURI, pour les différents niveaux de traitement.

Chapter 8 – Treatment System Objectives

8.2 Treatment Objectives

Every system must also accomplish a minimum degree of treatment of the influent waste stream prior to discharge to the soil dispersal system. Today's

on-site treatment technology ranges from conventional septic tank with effluent filter to advanced tertiary treatment systems with nutrient removal and/or disinfection. For the purpose of the criteria the following minimum treatment objectives are defined:

Table 8.2
Treatment Objectives

Treatment Objective	BOD_5 (mg/l)	TSS (mg/l)	FOG (mg/l)	TIN (mg/l)	TP (mg/l)	Fecal Coliform[a]
FP	140	55	20	50[b]	------	-----
ST	30	30		-----	------	-----
NR	30	30		20 / 40[c]	------	-----
EBNR	30	30		10 / 20[c]	------	-----
PR	30	30		-----	2	----

FP - Filtered Primary - basic septic tank effluent quality.
ST - Secondary Treatment
NR - Nitrogen Reduction
EBNR - Effluent Based Nitrogen Removal (10 mg/l TIN limit)
PR - Phosphorous Reduction

[a] – The determination for fecal coliform limits/disinfection is based on case-by-case evaluation of risk to surface or groundwater
[b] – Ammonia (Total Kjeldahl Nitrogen = 90 mg/l)
[c] – Monthly average / 7-day average
All values in Table 8.2 reflect the monthly average unless otherwise noted.

Il n'y a toutefois pas de recommandation quant au suivi ou au sujet d'un échantillonnage de ces contaminants.

5.6 CERTIFICATION : Entité responsable d'effectuer la certification des différents intervenants et des technologies

La certification ou qualification des fabricants de systèmes de traitement avancés est sous la responsabilité de l'État. C'est-à-dire que l'État est responsable de publier une liste des technologies (systèmes de traitement avancés) approuvées. Le processus de certification est décrit au point 9.2. Selon cette procédure, un fournisseur doit, entre autres, démontrer qu'il est reconnu par un protocole de certification indépendant approprié, par exemple NSF40.

> ***Chapter 9 – Alternative Treatment Technologies***
>
> ***9.2 Proprietary Treatment Technology***
>
> ***Proprietary treatment technology include any treatment product held under patent or trademark which significantly contributes to the treatment performance and attainment of effluent quality objectives as indicated in Table 8.2, Minimum Treatment Objectives. The system designer shall verify to the satisfaction of the agency that the proprietary product can be expected to meet treatment objectives for the defined wastewater characteristics and site conditions. Verification shall be supported by the following information:***
>
> ***[…]***
>
> ***8. The most recently available product test protocol and third party results report (E.G. National Sanitation Foundation (NSF) Standard 40, NSF Standard 245, Environmental Technology Verification Program or independent third party results);***

Il n'y a pas de norme de certification pour les fosses septiques ou autre composante préfabriquée. Les installateurs/entrepreneurs n'ont pas non plus, d'obligation de certification en vertu du guide ou de la Loi.

En ce qui concerne le suivi ou l'entretien des systèmes, le guide recommande de retenir les services d'une personne qualifiée (point 10.4). Le texte du point 10.4 doit toutefois être interprété en fonction de la plage d'application du guide. C'est-à-dire, que la notion d'entretien s'applique plus certainement à des systèmes communautaires.

> ***10.4 Qualified Maintenance Providers***
>
> ***The performance of operation and maintenance activities should only be undertaken by those qualified maintenance providers who possess adequate training and experience related to the specific treatment and dispersal system. It is the system owner's responsibility to retain the services of such qualified maintenance provider to conduct/document necessary routine operation and maintenance activities. The DEQ may require the maintenance provider to become certified operators pursuant to statute and rules to demonstrate they are***

> ***properly qualified to operate the facilities. Additionally, specific training and certification programs administered by proprietary equipment manufacturers or other third party organizations may be considered. The qualified maintenance provider shall be identified in the management plan.***

Les consultants ou professionnels en sols doivent être certifiés par le « Department of licensing and regulatory affairs » en fonction de leur formation académique et d'un code de déontologie (guide, page 7).

> ***Chapter 2 – General Provisions***
>
> ***2.2 Construction Plans, Supervision, Inspections and Approvals***
>
> ***2.2.1 – System Designer Qualifications and Other Competent Professionals***
>
> ***The design and submittal of plans for systems under the criteria should only be made by those licensed professional engineers or registered sanitarians, as allowed by law.***
>
> ***These professionals must possess competence in wastewater treatment and soil dispersal systems gained through a combination of education and experience. Standards of practice and professional conduct require that for all phases of the project where the system designer lacks competence, the services of other competent professionals shall be retained.***

Il n'y a pas d'autre exigence relative à la certification.

5.7 CAPACITÉ : Capacité des fosses septiques

La capacité minimum exigée pour les fosses septiques est de 1 000 gallons (3785 L). Selon le libellé du guide nous sommes d'avis qu'il s'agit d'une capacité effective « effective liquid capacity ». Le dimensionnement des fosses septiques n'est pas déterminé en fonction du nombre de chambre mais plutôt en fonction d'un temps de rétention à atteindre. Le point 11.4.1 ci-dessous décrit les critères de conception et de dimensionnement des fosses septiques.

> ***11.4.1 Septic Tank Design***
>
> ***Septic tanks shall have the following design:***
>
> ***1. Have a minimum size of 1,000 gallons, regardless of flow.***
>
> ***2. Have an effective liquid capacity sufficient to provide a minimum retention time of 2-times the daily peak design flow if wastes are of typical domestic strength.***
>
> ***3. The length to width ratio of a single tank shall be no less than 2:1, however 3:1 is preferred. The greater ratio allows more opportunity for the flotation and settling processes to occur. The installation of multiple tanks may be accepted as a means to provide protection against short-circuiting of flow.***
>
> ***4. The water depth shall be no less than four (4) feet to provide an adequate zone for the separation and stratification of raw waste materials into three zones within the tank commonly referred to as scum, sludge, and clear effluent zones.***
>
> ***5. When design flows are greater than 1,000 gpd, tank partitioning or multiple tanks must be utilized. The first compartment or tank in a series must have a greater volume than any following compartment or tank. It is recommended that the first compartment have a capacity of one-half to two-thirds of the total volume required.***
>
> ***6. When the tank has compartments, flow between compartments can occur in the baffle wall via piping located in the clear zone of the tank (mid-depth of tank). Adequate venting must be provided between compartments.***
>
> ***7. Have adequate tank volume prior to a proprietary treatment unit in compliance with the manufacturer's requirements.***
>
> ***8. Though not a recommended practice, if a tank has sewage inflow from a pumped source (e.g. lift station, ejection basin) the minimum retention time shall be 4 times the daily peak design flow.***

De plus, d'autres recommandations relatives aux fosses septiques sont données au point 11.4.2 du guide.

> ***11.4.2 Tank Considerations for High Strength Waste***

One of the most common generators of high strength wastewater using on-site systems is food service establishments. The use of grease interceptor tanks is particularly important on systems serving food service establishments because the kitchen waste stream is often the largest portion of the organic waste load. For systems serving restaurants (or other food service establishments) under the criteria, the kitchen waste stream shall be plumbed to one or more grease interceptor tanks. Other waste streams, such as restrooms shall be plumbed directly to the septic tank(s) prior to combining the waste streams for other treatment or soil dispersal.

For high strength waste:

1. Grease interceptor tanks shall have an effective liquid capacity sufficient to provide a minimum retention time of three times the daily peak design flow.

2. Septic tank volume of three to four times the daily peak design flow should be provided. Increased tank volume alone may not reduce the waste strength to that comparable to domestic wastewater. However, more tank volume and/or multiple tanks may aid in the reduction of FOG.

5.8 VIDANGE : Encadrement de la vidange des fosses septiques

La fréquence de vidange n'est pas encadrée par l'État (Loi et guide). Différents fournisseurs de service de vidange de fosse septique du Michigan recommandent de faire la vidange aux 2 à 3 ans. Le mesurage de l'écume et des boues n'est pas une pratique courante. Il s'agit d'une recommandation de bonne pratique. Compte tenu qu'il n'y a pas d'obligation de vidange, il n'y a pas non plus d'obligation de conserver ou de fournir une preuve de la vidange.

5.9 SUIVI : Nécessité de faire le suivi des installations septiques

Le chapitre 10 du guide formule des recommandations au sujet du suivi du fonctionnement des installations septiques. Le DEQ prévoit qu'il est de la responsabilité du propriétaire de maintenir un plan pour les suivis à faire sur son installation. Dans certains contextes cette responsabilité doit être confiée à un tiers qualifié « Qualified Maintenance Providers ».

> ***Chapter 10 – System Management***
>
> ***10.1 System Management Plan***
>
> ***The owner of the on-site wastewater system is responsible for ensuring that the system is monitored, inspected, serviced, and otherwise maintained after construction. Routine and proper operation, maintenance, and documentation, thereof ensures that the system will perform as designed. For any system designed and approved for soil dispersal under the criteria the agency shall require that a draft system management plan be included in the overall construction plan submittal. As a condition of overall final approval and before placing the on-site system into operation the final system management plan shall be provided to the agency for review and approval.***
>
> ***10.2 System Management Plan Content***
>
> ***The system management plan shall include all necessary information and procedures for maintenance to allow the system to reliably function as designed and approved. The system management plan details will vary on a site by site basis depending upon the nature of the facility, the type of treatment, and method of final soil dispersal. In general, management oversight increases as wastewater flow, strength, and level of treatment prior to dispersal increases. In addition to a copy of the as-built construction plan, the management plan should include but not be limited to the following, as appropriate:***
>
> ***1. A general description of the overall treatment and dispersal system, operation, and proper use.***
>
> ***2. A copy of the current operating permit or discharge authorization, if applicable.***
>
> ***3. Start-up and shut-down procedures.***
>
> ***4. Meter monitoring, sampling (e.g. sample frequency, sample location, sample analytical units needed, etc.) and reporting procedures.***
>
> ***5. Accumulated wastewater solids monitoring and removal procedures.***
>
> ***6. Servicing frequency of key treatment and dispersal components.***
>
> ***7. Detailed specifications and specific maintenance schedules for any mechanical treatment system components.***
>
> ***8. Manufacturer's mechanical equipment and/or control settings.***

9. Contingency plan due to malfunction of system components.

10. Contact information for system owner, service providers and regulatory agencies.

As part of the on-going system oversight, the agency shall ensure that the system management plan be periodically updated as necessary.

10.3 System Management Objectives

Table 10.1 indicates the minimum system management and reporting objectives deemed appropriate based upon overall treatment system classification and design flow. These objectives can vary due to site specific concerns and/or treatment technology.

Table 10.1

System Management Objectives

Treatment System Classification	*System Description*	*Operating Permit and/or Maintenance Contract*	*Minimum Monitoring1/Reporting2 Frequency2*	*Qualified Maintenance Provider3*
Conventional	*System with flows <1,000 gpd with non-uniform dispersal of FP effluent to soils.*	*Recommended [8]*	*Self-monitoring and Records. Complete System Evaluation Every five (5) years recommended.*	*Owner Oversight*
	System with flows <1,000 gpd with non-uniform dispersal of high strength septic tank effluent to soils.	*Maintenance Contract*	*Annual*	*Yes*
Alternative	*Systems with flows <1,000 gpd with uniform dispersal of FP effluent to soils via pressure distribution, drip irrigation, etc. only.*	*Recommended*	*Self-monitoring and Records. Complete System Evaluation Every five (5) years recommended.*	*Recommended*
	Systems with flows >1,000 gpd	*Recommended*	*Annual (Recommended)*	*Recommended*

[8] La « recommandation » d'un permis d'opération et/ou d'un contrat d'entretiens équivaut dans les faits à dire qu'aucun de ceux-ci n'est officiellement requis par l'état.

	and <6,000 gpd with uniform dispersal of FP effluent to soils via pressure distribution, drip irrigation, etc. only.			
	Systems with flows ≤1,000 gpd incorporating enhanced treatment.	***Operating Permit & Maintenance Contract***	***Annual***	***Yes***
	System with flows ≥1,000 gpd and <6,000 gpd incorporating enhanced treatment.	***Operating Permit & Maintenance Contract***	***Semi-Annual***	***Yes***

1 Higher Monitoring frequency may be necessary at start-up.

2 Increased reporting requirements may be based on local regulation.

3 See Section 10.4.

10.4 Qualified Maintenance Providers

The performance of operation and maintenance activities should only be undertaken by those qualified maintenance providers who possess adequate training and experience related to the specific treatment and dispersal system. It is the system owner's responsibility to retain the services of such qualified maintenance provider to conduct/document necessary routine operation and maintenance activities. The DEQ may require the maintenance provider to become certified operators pursuant to statute and rules to demonstrate they are properly qualified to operate the facilities. Additionally, specific training and certification programs administered by proprietary equipment manufacturers or other third party organizations may be considered. The qualified maintenance provider shall be identified in the management plan.

Le guide ne contient pas de détails sur la réalisation d'un relevé sanitaire, l'entretien, l'échantillonnage ainsi que les paramètres qui doivent être respecté lors d'un échantillonnage.

5.10 RESTRICTIONS : Restrictions quant à la localisation des installations septiques

Le tableau 4.1 du guide spécifie les normes de localisation sans distinction sur la partie étanche ou non étanche d'un système.

> ***Chapter 4 – Establishing Site Suitability for Soil Dispersal […]***
>
> ***4.6.7 Location and Horizontal Isolation – Table 4.1 identifies the minimum horizontal isolation distances which shall be provided to allow proper installation, maintenance, and to be protective of the environment and public health. These minimums may only be increased based upon site specific conditions and the nature of the proposed discharge. Reduced isolation may be considered through the variance process described in Chapter 3.***
>
> **Table 4.1**
> **Minimum Horizontal Isolation Distances**

From Soil Dispersal and Tank[1] To:	Minimum Horizontal Isolation Distance (feet)[2]
Type I Public Well	200
Type II-a Public Well	200
Type II-b Public Well	75
Type III Public Well	75
Private Individual Well	50
Other Wells	50
Surface Waters	100
Building Foundation or Basement Walls	10
Top of Drop-Off	20
Property Lines	10
Footing Drains Installed in Water Table Without Direct Connection to Surface Water	25
Footing Drains Installed in Water Table with Direct Connection to Surface Water	50
Drains Designed to Lower the Water Table	100
Pressurized Water Lines	10

[1] as measured from perimeter of dispersal system or tank.
[2] Increase may be required due to site specific conditions

Il n'y a pas d'autre norme de localisation dans les documents consultés.

5.11 MILIEUX SENSIBLES :

Tel que mentionné au point précédent, le guide prévoit des normes de distances (marge de recul) à respecter à partir d'un lac ou d'un cours d'eau « Surface waters ». Par définition (page 64 du guide), ce terme comporte les grands lacs et leur tributaires, les lacs, rivières, ruisseaux, étangs, fossés et tout cours d'eau sous la juridiction de l'État. De plus, le chapitre 7 du guide prévoit des dispositions supplémentaires relatives à la protection des eaux souterraines et de surface. Le chapitre 7 est reproduit intégralement en annexe de ce document.

Les documents consultés ne traitent pas plus spécifiquement de la protection des lacs et cours d'eau ni de milieux humides. Il ne retrouve pas non plus de disposition pour la protection des milieux boisés.

En ce qui concerne les secteurs de pente forte, le guide recommande de limiter la réalisation de travaux sur des sites en pente de plus de 25%, non pas pour des risques de mauvaise performance du système, mais bien pour des fins de sécurité des travailleurs.

> ***Chapter 4 – Establishing Site Suitability for Soil Dispersal***
>
> ***4.6.6 Slope - Natural ground slope should be less than 25 percent in the system area to promote safety of workers during construction.***

Il n'y a pas d'autre disposition sur des milieux sensibles.

5.12 TOILETTES : Toilettes à compost, toilettes chimiques et toilettes à incinération

Les documents consultés ne traitent pas spécifiquement des toilettes à compost, toilettes chimiques ou des toilettes à incinération. Toutefois, selon notre compréhension, les toilettes alternatives pourraient être autorisées selon les dispositions du chapitre 9 du guide, décrites au point 6 du présent document.

5.13 PERMÉABILITÉ DU SOL :

Le guide n'établit pas spécifiquement de plage de perméabilité mais propose plutôt une classification des sols en fonction de leur texture et structure pour déterminer un taux de charge hydraulique approprié. L'absence de taux de charge hydraulique apparait ainsi correspondre à des sols inappropriés à l'infiltration de par leur texture, forme ou densité.

Table 4.2

Soil Loading Rates for Infiltrative Surfaces

SOIL TEXTURE	SOIL STRUCTURE		HYDRAULIC LOADING RATE (gpd/ft2)		LINEAR LOADING RATE (gpd/ft)
	SHAPE	GRADE	BOD>30 mg/L and < 140 mg/l*	BOD<30 mg/L	
Coarse sand, Sand, Loamy coarse sand, Loamy sand	Single grain	Structureless	0.8	1.6	6
Fine sand, Very fine sand	Single grain	Structureless	0.6	1.2	5
Loamy fine sand, Loamy very fine sand	Single grain	Structureless	0.4	1.0	5
Coarse sandy loam, Sandy loam	Massive	Structureless	0.2	0.6	4
	Platy	Weak	0.2	0.5	
		Moderate, Strong			
	Prismatic , Blocky, Granular	Weak	0.4	0.7	
		Moderate, Strong	0.6	1.0	
Fine sandy loam, Very fine sandy loam	Massive	Structureless	0.2	0.5	3
	Platy	Weak, Moderate, Strong			
	Prismatic , Blocky, Granular	Weak	0.2	0.6	
		Moderate, Strong	0.4	0.8	
Loam	Massive	Structureless	0.2	0.5	3
	Platy	Weak, Moderate, Strong			
	Prismatic , Blocky, Granular	Weak	0.4	0.6	
		Moderate, Strong	0.6	0.8	
Silt Loam	Massive	Structureless		0.2	3
	Platy	Weak, Moderate, Strong			
	Prismatic , Blocky, Granular	Weak	0.4	0.6	
		Moderate, Strong	0.6	0.8	
Sandy clay loam, Clay loam, Silty clay loam	Massive	Structureless			2.5
	Platy	Weak, Moderate, Strong			
	Prismatic , Blocky, Granular	Weak	0.2	0.3	
		Moderate, Strong	0.4	0.6	
Sandy clay, Clay, Silty clay	Massive	Structureless			2.5
	Platy	Weak, Moderate, Strong			
	Prismatic , Blocky, Granular	Weak			
		Moderate, Strong	0.2	0.3	

Source: Adapted from Tyler, 2000 – U.S. Environmental Protection Agency (U.S. EPA) On-site Wastewater Treatment Systems Manual

* For BOD_5 >140 mg/l, see Chapter 5

Le guide ne prévoit pas clairement de solution privilégiée ou de hiérarchie à suivre dans le choix d'un système. À la lecture des documents consultés, nous comprenons qu'en pratique, la priorité est donnée aux systèmes de traitement par infiltration. Cependant, un système avec rejets au cours d'eau ou au fossé pourrait être autorisé lorsque la construction d'un système d'infiltration n'est pas possible[9]. Il n'y a pas de mention au sujet des fosses de rétention.

> ***R 560.424 Alternative methods of sewage treatment and disposal.***
>
> ***Rule 424. (1) The department may approve an alternative treatment and subsurface disposal system for a development site less than 1 acre in size or a lot deemed suitable or not suitable for a conventional subsurface sewage system.***
>
> ***(2) The department of environmental quality shall provide technical guidance in defining minimum site suitability and design and long-term operation and maintenance requirements considered essential for the proper functioning of specific alternative systems.***
>
> ***(3) The owner may utilize an alternative system if the specific alternative is provided for under the regulations of the city, county, or district health department having jurisdiction and if the department of environmental quality has authorized the alternative system's use.***

Le guide ouvre aussi la porte à la construction d'un système en profondeur « Deep Cut Excavations » comme alternative dans un sol imperméable.

> ***4.12 Deep Cut Excavations***
>
> ***Soil dispersal proposals utilizing deep cut excavations may only be approved by a variance from the agency granted in accord with Sections 3.1 and 3.23.***
>
> ***4.12.1 Variance Criteria for Deep Cut Excavations***
>
> ***If suitable soils as specified in Table 4.2 are not present within the upper six (6) feet of the soil profile and alternative methods of sewage treatment and dispersal have been considered under Chapter 9 or Chapter 14, then the agency may approve a variance request for the use of deep cut excavations to expose acceptable underlying soils that exist within 20 feet of the natural grade must address all of the following: [...]***

9 Michigan Administrative Code, Part 4, Department Of Environmental Quality On-Site Water Supply And Sewage Disposal For Land Divisions And Subdivisions

D'autre part, le guide prévoit un processus de dérogation ou d'autorisation au cas par cas. Le point 3.1 décrit ce processus.

> ***3.1 Basis for Variance***
>
> ***It is the intent of the criteria to provide minimum standards to be used in site evaluation and the design and construction of soil dispersal systems. However, there may be special circumstances which justify a variance from particular provisions. Such variances shall be granted by the DEQ or authorized LHD having jurisdiction when all the following are met:***
>
> ***1. Where the provisions contained within the criteria cannot be met or where strict compliance is not required to meet the purpose of the criteria.***
>
> ***2. Where other more acceptable alternatives are not available.***
>
> ***3. Where the requested variance will not create the potential for a health hazard, nuisance condition, or the pollution of groundwater or surface water, or otherwise violate the purpose of these criteria as stated in Section 1.2.***

Ceci-dit, selon le tableau 4.2, en théorie, la construction d'un système de traitement par infiltration serait possible dans un sol argileux, sous réserve de sa structure, donc dans un sol considéré imperméable au sens du RETEURI. Dans ce cas, une distribution sous faible pression est toutefois obligatoire pour les systèmes de plus de 1000 gallons/jour dont le taux de charge hydraulique du sol est inférieur à 0,3 gpd/ft². Par opposition, une distribution gravitaire est donc considérée adéquate pour les systèmes traitant moins de 1000 gallons/jour.

Table 4.3
Dispersal System Design Criteria

BOD_5	Dispersal Type	Distribution[1]	Dispersal System Sizing[2]
BOD_5 > 30 mg/l< 140 mg/l	Below Natural Grade	Gravity distribution only acceptable for systems < 1,000 gpd. All others must use pressure distribution or equal.	Must have hydraulic loading rate and linear loading rate not to exceed values as listed in Table 4.2. Sizing based upon soils at infiltrative surface unless other treatment/dispersal restrictions imposed.
	At Natural Grade	Pressure distribution or equal for all systems > 1,000 gpd or soils with hydraulic loading rate ≤0.3.	Must have hydraulic loading rate and linear loading rate not to exceed values as listed in Table 4.2. Sizing based upon most limiting soil texture and structure in upper 18-inches of natural soil.
	Above Natural Grade	Pressure distribution or equal for all systems > 1,000 gpd or soils with hydraulic loading rate ≤0.3.	Sizing based upon hydraulic loading rate for BOD < 30 mg/l with a minimum of one (1) foot of fill and pressure distribution. Must have hydraulic loading rate and linear loading rate not to exceed values as listed in Table 4.2. Sizing based upon most limiting soil texture and structure in upper 18-inches of natural soil.
BOD_5 < 30 mg/l	Below Natural Grade	Gravity distribution only acceptable for systems < 1,000 gpd. All others must use pressure distribution or equal.	Must have hydraulic loading rate and linear loading rate not to exceed values as listed in Table 4.2. Sizing based upon soils at infiltrative surface unless other treatment/dispersal restrictions imposed.
	At Natural Grade	Pressure distribution or equal for all systems > 1,000 gpd or soils with hydraulic loading rate ≤0.3.	Must have hydraulic loading rate and linear loading rate not to exceed values as listed in Table 4.2. Sizing based upon most limiting soil texture and structure in upper 18-inches of natural soil.
	Above Natural Grade	Pressure distribution or equal for all systems > 1,000 gpd or soils with hydraulic loading rate ≤0.3.	Must have hydraulic loading rate and linear loading rate not to exceed values as listed in Table 4.2. Sizing based upon most limiting soil texture and structure in upper 18-inches of natural soil.

[1] All Deep Cut Systems (see Section 4.12) must utilize pressure distribution or equivalent.
[2] See Chapter 5 for High Strength Wastewater considerations.

5.14 FORTES CONTRAINTES : Solutions pour les sites à fortes contraintes

Le guide contient des normes en zone inondable au point 4.6.8.

> ***4.6.8 100 year floodplain - the areas for initial and replacement on-site sewage disposal systems shall have natural ground surface elevation above the elevation defining the 100-year floodplain, where a floodplain exists.***
>
> ***The agency shall ensure that the soil infiltrative surface of the sewage disposal system is located at an elevation that is above the elevation defining the 100-year floodplain.***

Les documents consultés ne proposent pas de solution précise pour le traitement des eaux usées sur des terrains affectés par des fortes contraintes telles que : zone inondable, rive, littoral ou en présence de contrainte de sol (roc, nappe d'eau souterraine, etc.). Hormis le processus de dérogation mentionné à la page précédente, aucune solution n'est mise de l'avant.

5.15 ÉTUDES : Études préalables et mise aux normes

Le mécanisme d'autorisation est décrit au chapitre 2 du guide. Selon le guide la construction d'une installation septique devrait être autorisé par le palier de gouvernement approprié (local ou État) avant la réalisation des travaux.

> ***2.1 General***
>
> ***Prior to the construction of a system under the criteria, construction approval, and required permits must be obtained from the agency having jurisdiction. Construction of the facility or modification of the site served by a soil dispersal system shall not begin until a construction permit and plan approval for the sewage system has been obtained from the authorized LHD and/or the DEQ under Part 22, or Part 41, Sewerage Systems, of the NREPA, if the system is a public system.***
>
> ***In Michigan, state law mandates that notification be given to a utility locating service (e.g. Miss Dig) prior to any site excavations, borings, or tunneling to determine the location of nearby underground utilities. The review agency as a condition of a permit issued under these criteria shall require that this be complied with.***

Lors d'une demande d'autorisation, les documents présentés au soutien de la demande devraient être préparés par un professionnel compétent « licensed professional engineers or registered sanitarians ». De plus, le demandeur doit fournir des plans de construction ainsi qu'une étude de caractérisation du site « Field Site Evaluation ». Le contenu de cette étude de caractérisation est décrit au chapitre 4 du guide, le point 4.4, ci-dessous résume bien les exigences.

> ***4.4 Field Site Evaluation***
>
> ***The agency shall assure that there is a coordinated joint field site evaluation with the system designer. The field site evaluation shall establish the following information:***
>
> ***1. Site boundaries.***
>
> ***2. Proposed and existing site improvements, required setbacks, and easements must be identified.***
>
> ***3. Underground utilities must be located by calling a utility locating service (e.g. Miss Dig) and other appropriate utilities before soil excavations and observations are undertaken.***
>
> ***4. Topographic information and other factors that may influence dispersal system design.***
>
> ***5. Any evidence of cut or filled areas or disturbed or compacted soil.***
>
> ***6. The flooding or run-on potential to the proposed dispersal area(s).***

7. A sufficient number of soil profile evaluations to confirm the existence of suitable soils for both the initial and reserve soil dispersal areas with at least one soil observation performed in the portion of the soil dispersal area anticipated to have the most limiting conditions. However, a minimum of three soil observations are required for systems with design flows greater than 1,000 gpd. In areas of complex soils, additional evaluations may be necessary. The competent soil evaluator shall evaluate enough test pits to characterize soil type (per United States Department of Agricultural [USDA] classification) and conditions across both the initial and reserve soil dispersal areas.

8. Soil evaluations should be completed by observation of shallow soil pits of adequate size, depth, and construction to safely enter and exit the pit and complete a soil profile description. With approval of the agency, a hand auger may be used for systems with flows less than 1,000 gpd and which will incorporate a soil dispersal component that is not dependent on soil structure. Other soil boring methods may be used with prior approval of the agency. If test pits are left open or unattended measures should be taken to secure against unauthorized entry.

Note: Required safety precautions must be taken before entering soil test pits.

9. Each test pit must be prepared so that the soil profile can be viewed in an original undisturbed position to a depth of at least six (6) feet; to a restrictive soil horizon or bedrock; or to the high groundwater elevation, whichever is shallower. Soil excavations shall always be of sufficient depth to provide adequate information for the design of the system.

10. Each soil profile observation must be evaluated under adequate light conditions with the soil in a moist and unfrozen state. Optimally, soil evaluations should be completed during those time periods where soils are sufficiently dry and completed in a manner which avoids damage to the proposed absorption area.

11. The agency shall assure that soil evaluations must be completed and accurately reported by a competent soil evaluator experienced with the USDA Soil Classification system. All of the following shall be reported:

a. Soil horizon depths (as measured from the ground surface);

b. Soil texture (per USDA soil classification system);

c. Soil structure;

d. Soil mottling;

e. Depth to high groundwater elevation or bedrock;

f. Groundwater levels observed at the time of the soil evaluation; and

g. The reporting of soil color, using a Munsell soil color chart to describe the soil matrix, may be necessary based on proposed flows or other factors.

> ***12. The agency shall assure that the location of all soil boring(s) or excavation(s) completed on the site are documented in a verifiable manner. Each soil observation shall be located with measurements from two permanent reference points, or equivalent. A reliable benchmark shall be established on the site that can be used for horizontal and vertical control.***
>
> ***13. The agency shall assure that the boundaries of the proposed area for the soil dispersal system(s) shall be visually marked. All proposed initial and reserve soil dispersal areas shall be protected from disturbance, compaction, or other damage by staking, fencing, posting, or other effective method as soon as practical.***

De plus, il est recommandé qu'une supervision de chantier soit réalisée par le consultant ayant préparé les plans du système (guide, point 2.2.3, page 8). En plus de cette supervision de chantier, l'autorité compétente (local ou État) peut exiger de réaliser une inspection des travaux.

> ***2.2.4 – Construction Inspection and Final Approval***
>
> ***The agency is to make such inspections as deemed necessary during construction to assure proper construction practices compliance with approved permit conditions, plans, and specifications or utilize an alternate process to accomplish this. Treatment system components including the soil dispersal system shall not be backfilled until the agency has given its approval unless waived by the agency due to mitigating circumstances. Waivers to the requirement for final inspection shall be documented in writing by the agency. The final approval of the system construction by the agency shall be withheld pending receipt of written certification from the system designer and documentation of a final inspection by the agency.***

Les documents consultés ne précisent pas s'il y a une différence d'obligation quant aux documents à fournir et à la procédure d'évaluation pour une nouvelle construction ou lors d'une modification de la situation pour une résidence ou un bâtiment existant (construction d'une chambre à coucher supplémentaire, changement de vocation, augmentation de la capacité d'exploitation ou d'opération, construction, rénovation, modification, reconstruction, déplacement ou agrandissement d'une installation septique). Néanmoins, nous comprenons que les exigences de mises aux normes en fonction de la version courante du règlement sont les mêmes dans le cas d'une modification mineure ou majeure. Le règlement est donc beaucoup moins spécifique et adaptatif aux différentes situations de modifications non substantielles que celui du Québec.

5.16 AUTRES :

Éléments du Q-2, r.22 qui sont couverts par le territoire visé

Définitions	X
Hiérarchie du choix d'un système	
Obligation de vidange des fosses septiques	
Méthodes pour établir la perméabilité du sol	X
Plages de perméabilité	
Référence aux normes BNQ/NSF	x
Normes de construction des fosses construites sur place	x
Préfiltre	x
Norme spécifique au déboisement (élément épurateur classique)	
Conduite d'amenée, raccordements et ventilation	
Champ d'application du Règlement/type d'eau	x
Prohibition de rejeter des eaux usées	x
Interdiction d'utiliser certains produits (désinfection de ces eaux usées)	x
Conditions d'émission des permis (plan, études, etc.)	x
Implication d'un professionnel compétent pour la conception (Ordre professionnels)	x
Désaffectation des systèmes	
Gestion des boues et des autres résidus	
Cheminement des eaux et des effluents	
Normes de localisation pour les systèmes étanches et les systèmes non étanches	x
Normes techniques à respecter (matériaux, dimensions, etc.)	x
Conditions d'implantation des systèmes (pente, perméabilité, épaisseur de sol naturel, etc.)	X
Obligation d'entretien et/ou de maintenir un contrat d'entretien des systèmes certifiés	x
Normes de rejet des systèmes	x
Systèmes spécifiquement pour des résidences/bâtiments existants	
Toilettes à compost	
Cabinet/toilettes sèches	
Solutions si ségrégation des eaux (toilettes vs eaux ménagères) (ex : vidange périodique)	
Déclencheurs/droits acquis pour la mise aux normes de systèmes existants	
Dispositions encadrant les rejets au fossé/cours d'eau	
Déphosphatation	
Désinfection	X
Méthodes de prélèvement et d'analyse des rejets des systèmes	
Définit la responsabilité des municipalités pour l'application du Règlement	X
Amendes/infractions	X
Dispositions applicables à des territoires particuliers (Basse-Côte-Nord Iles-de-la-Madeleine, etc.)	x

Éléments couverts par le territoire visé et qui ne sont pas traités dans le Q-2, r.22

- Distribution gravitaire réservée aux débits journaliers de 1000 gallons et moins.
- Dispositions sur l'assemblage des postes de pompages
- L'utilisation d'une pompe avant fosse septique est déconseillée
- Il n'y a pas de maximum de remblai sur fosse
- Modifications de site par drainage en cas de nappe phréatique élevée
- Installation profonde (deep-cut) au besoin si couche impropre surmonte une couche plus propice
- Procédure de dérogation pour situations non conformes aux règles générales
- Planification à l'avance d'une surface de remplacement (espace de réserve)

ANNEXES Michigan :

Table 6.1
Community System Suggested Basis of Design

4 Bedroom Homes

Number of Homes	Average (gal/day/home)	%Peaking factor	Design flows (gal/day/home)
2 – 10	280	25%	350
11- 20	280	20%	336
21 -30	280	15%	322
30+	280	10%	308

3 Bedroom Homes

Number of Homes	Average (gal/day/Home)	%Peaking factor	Design flows (gal/day/home)
2 – 10	210	25%	263
11- 20	210	20%	252
21 -30	210	15%	242
30+	210	10%	231

2 Bedroom Homes

Number of Homes	Average (gal/day/home)	%Peaking factor	Design flows (gal/day/home)
2 – 10	140	25%	175
11- 20	140	20%	168
21 -30	140	15%	161
30+	140	10%	154

The agency may also consider site specific data presented by the system designer from initial phases of the same development or data from other comparable existing developments. Community systems serving non-residential facilities (e.g. strip mall, commercial, etc.) shall be considered on a case-by-case basis.

Chapter 7 – Groundwater and Surface Water Protection

7.1 General

Under all site and soil conditions, the agency shall give consideration to the protection of groundwater and surface waters. This is especially critical where very permeable soils or fractured rock formations are near the ground surface thus limiting soil treatment capability. Available data obtained from test wells or nearby drinking water supply wells should be included as part of the plan submittal. Test wells and/or deep borings and backhoe cuts may be required to

determine the available site conditions providing for the protection of groundwater and surface waters.

The potential risk for contamination of groundwater aquifers and nearby surface waters increases as the volume of wastewater discharged increases. The agency is responsible to assure that during the planning and design phase, these risks are evaluated on an individual, case-by-case basis to establish the minimum treatment objective and soil dispersal. Based upon an established risk, alternative treatment may be incorporated into the design of the system as necessary to reduce the nitrogen and/or phosphorous in the final effluent to a level that is expected to be protective of both groundwater and surface waters. An evaluation of the site for both groundwater and surface water vulnerability is a key component in determining potential risk and defining the required minimum treatment objective.

7.2 Groundwater Vulnerability

In all instances, for any system being designed, constructed, operated, and maintained under the criteria, it shall be substantiated that groundwater quality of usable aquifers is protected for existing or future use. Categorizing aquifer vulnerability can range from a very basic assessment of available water supply well records, to in-depth and detailed hydrogeological studies. In general, the need for a more rigorous evaluation increases as the volume of discharge increases.

Assessment of groundwater vulnerability is completed by review of site specific information, including but not limited to the review and consideration of the following:

1. Surface soil texture and permeability;

2. Presence or absence of confining layers of sufficient areal extent between the soil-based dispersal system and uppermost usable aquifers;

3. Horizontal isolation afforded to existing and future water supply wells;

4. Direction of groundwater flow/venting; and/or

5. Depth to high groundwater elevation.

Groundwater vulnerability may be established by consideration of the surface soil textures first and the presence/absence of confining layers. Groundwater vulnerability should be established based upon a review of the land area within a quarter mile radius of the proposed soil-based dispersal system unless it has been elected to conduct a detailed hydrogeological assessment.

Surface soils can be classified into three permeability categories based upon recognized USDA soil texture descriptions as follows:

Rapidly permeable – Sand (S), Loamy Sand (LS)
Moderately permeable – Sandy Loam (SL), Sandy Clay Loam (SCL), Loam (L), Silt Loam (SiL), Silt (Si)
Slowly Permeable – Clay Loam (CL), Silty Clay Loam (SICL), Silty Clay (SC), Clay (C)

The presence or absence of confining layers can sometimes be established based upon a review of existing water supply well records where available. More accurate determination can be made through completion of a sufficient number of water supply wells or test wells. Aquifer vulnerability can then be ranked as low, moderate, or high based upon the following conditions:

Table 7.1

Vulnerability Class	Conditions
Low	Rapidly, moderately, and slowly permeable soils with confining layers of areal extent.
Moderate	Moderately and slowly permeable soils with discontinuous confining layers or without confining layers.
High	Rapidly permeable soils with discontinuous confining layers or without confining layers.

Groundwater flow direction can also become an important consideration in establishing groundwater vulnerability. Examples include instances where nearby existing or future wells lack confining layers and determining impacts on down-gradient water supply wells are important. Likewise, a determination of groundwater flow direction shall be documented where venting to surface water is proposed as a protection mechanism.

7.3 Surface Water Vulnerability

The greatest risk to surface water quality relates to the potential impacts from phosphorous. In general, the risk of phosphorous contamination is greatest in areas of shallow soils over fractured bedrock and in coarse-textured soils with limited adsorption capacity. Increased horizontal isolation of the system is also an important design factor in limiting phosphorous migration because of the greater and more prolonged contact with soil particle surfaces.

Beyond establishing the location of the final dispersal system which meets or exceeds minimum horizontal isolation established in Table 4.1, each site should be further evaluated to assess the potential risk for phosphorous impact based upon site specific conditions and other factors that may include the following:

1. Anticipated flow volume.

2. Pre-treatment to reduce phosphorous prior to discharge to the soil-based dispersal system.

3. The natural capacity of the soils to uptake phosphorous and the total volume of soil that the wastewater is expected to contact.

4. Direction of groundwater flow, the rate of water movement, and high groundwater elevation fluctuation.

In general, the risk associated with phosphorous will increase with the flow volume and proximity to surface water. For systems with flows exceeding 6,000 gpd the agency shall determine the need for a site specific evaluation where the final dispersal system will be within 500 feet of surface waters.

Chapter 8 – Treatment System Objectives

8.1 Treatment System Design Concepts

The overall design of the treatment system inclusive of soil dispersal must address the waste character and site conditions. Compliance criteria in Table 8.1 apply to treatment systems with soil dispersal. Once the design concept has been selected, the agency shall require that a detailed design of the system's specific components be submitted. The design is to be reviewed by the agency in accordance with standards and guidance prescribed herein.

SOURCES Michigan:

1. *Michigan Department of Environmental Quality, Michigan Criteria for On-Site Wastewater Treatment, Janvier 2013*
2. *https://www.michigan.gov/egle/0,9429,7-135-3313_71618_51002---,00.html*

6.0 MINNESOTA

6.1 ENCADREMENT :

Le gouvernement de l'État du Minnesota a mis sur pieds une agence gouvernementale qui est responsable de la protection et de la qualité de l'environnement. C'est cette agence, la « Minnesota Pollution Control Agency » (MPCA) qui est responsable de développer le cadre législatif et l'encadrement des installations septiques pour l'État. L'application du respect des règlements est déléguée aux autorités locales. Trois règlements ont retenu notre attention dans le cadre de ce projet. Ceux-ci découlent de la loi « Chapter 115. Water pollution control act » mise à jour en 2015.

- Le « Chapter 7080, Individual subsurface sewage treatment system », ci-après le règlement, encadre le traitement des eaux usées pour les débits journaliers de 5000 gallons (18 927 L/jour) et moins. À même ce règlement, les projets de 2500 gallons/jour (9 463 L/jour) et moins sont soumis à des mesures de contrôle distinctes moins restrictives. La dernière version du règlement est à jour en date du 6 septembre 2016.
- Le « Chapter 7082, Administrative Requirements of Local SSTS Programs », ci-après le règlement administratif, prévoit les modalités administratives de délégation de pouvoirs aux autorités locales. Ce règlement traite, par exemple : d'émission de permis, d'adoption de normes locales ou de programme d'entretien. La dernière version du règlement est à jour en date du 6 septembre 2016.
- Le « Chapter 7083, Certification/Licensing, Product Registration, Advisory Committee », ci-après le règlement 7083, encadre quant à lui la certification des différents intervenants et des technologies. La dernière version du règlement est à jour en date du 6 septembre 2016.

Le partage des responsabilités entre les différents paliers décisionnels est clairement décrit au règlement administratif (article 7082.0040).

> ***7082.0040 REGULATORY ADMINISTRATION RESPONSIBILITY.***
>
> ***Subpart 1. Agency responsibilities. The agency is responsible for providing the framework for local SSTS ordinances along with providing minimum administrative procedures or strategies to ensure effective permitting and inspection of SSTS. The agency is also responsible for reviewing local ordinances to ensure adequate protection of public health and the environment and that local administration is sufficient to ensure compliance.***
>
> ***Subp. 2. County responsibilities.***
>
> ***A. All counties must adopt and implement SSTS ordinances in compliance with chapters 7080 and 7081 that also comply with this chapter. Ordinances must apply to all land area within the county, except in towns and cities that have***

adopted ordinances that are in conformance with the county ordinance and this chapter. All counties with SSTS ordinances must permit and inspect SSTS within cities and townships that do not administer an SSTS ordinance that complies with these rules.

B. Counties must send written invitations to all cities and townships within the county soliciting their input and involvement with the county-coordinated process of establishing countywide SSTS ordinance standards.

Subp. 3. City and township responsibilities. Cities and townships with SSTS ordinances must effectively administer and enforce an ordinance that conforms with this chapter and is administratively and technically as strict as the county ordinance, as determined by the agency. Cities and townships are authorized to adopt conventional programs as described in part 7082.0050, subpart 3, even if the county has adopted a performance program.

6.2 TYPE D'EAU : Types d'eau visés par l'encadrement

Le règlement vise la gestion des eaux usées de nature domestique jusqu'à un débit journalier de 5000 gallons (18 927 L/jour) (article 7080.1100).

> ***Subp. 73. Sewage. "Sewage" means waste produced by toilets, bathing, laundry, or culinary operations or the floor drains associated with these sources, and includes household cleaners, medications, and other constituents in sewage restricted to amounts normally used for domestic purposes.***

De plus, l'article 7080.1550 contient certaines précisions au sujet de la nature des eaux pouvant être dirigées vers une installation septique. Les eaux usées doivent faire l'objet d'un traitement additionnel si elles excèdent les charges typiques d'eau domestique à la sortie du bâtiment ou à la sortie de la fosse septique.

> ***7080.1550 ACCEPTABLE AND PROHIBITED DISCHARGES.***
>
> ***Subpart 1. Sewage. This chapter provides design standards for ISTS that exclusively receive sewage. If ISTS receive both sewage and nonsewage, the requirements of this chapter and requirements governing the nonsewage portion of the waste apply.***
>
> ***Subp. 2. System influent.***
>
> ***A. Footing or roof drainage and chemically treated hot tub and pool water must not be discharged into any part of a system. Products containing hazardous chemicals and hazardous waste must not be discharged to a system other than in normal amounts of household products and cleaners designed for household use. Substances not intended for use in household cleaning, including but not limited to solvents, pesticides, flammables, photo finishing chemicals, paint, and dry-cleaning chemicals must not be discharged to the system. Other unused products or substances, or unused medicines, must not be discharged to the system solely as a method of disposal. Floor drains from garages serving dwellings must not be connected to the system.***
>
> ***B. An ISTS must be designed to provide additional treatment if:***
>
> ***(1) raw sewage exceeds 300 mg/l BOD, 200 mg/l TSS, or 50 mg/l oil and grease; or***
>
> ***(2) sewage tank effluent applied to the soil from the sewage tank or other secondary treatment device is greater than the concentrations in part 7080.2150, subpart 3, item K.***
>
> ***Additional treatment must be designed by a Minnesota licensed professional engineer or according to the recommendations in the Prescriptive Designs and***

> ***Design Guidance for Advanced Designers, which is incorporated by reference in item C, or must use a product registered under chapter 7083.***
>
> ***C. Prescriptive Designs and Design Guidance for Advanced Designers, Minnesota Pollution Control Agency (September 2009 and as subsequently amended), is incorporated by reference, is subject to frequent change, and is available at www.pca.state.mn.us/programs/ists/technical.html.***

Tel que décrit à l'article 7080.1050, si des eaux usées non domestique sont combinées à celles-ci, elles doivent faire l'objet d'une double gestion en fonction de toute autre loi fédérale ou règlement applicable.

> ***7080.1050 PURPOSE AND INTENT.***
>
> ***This chapter regulates all ISTS as defined in this chapter. This chapter does not regulate systems that do not receive sewage as defined in this chapter. If systems receive both sewage and nonsewage, the requirements of this chapter apply, plus any additional requirements governing the nonsewage portion of the wastewater. Systems serving two or more dwellings, systems serving other establishments that serve over 20 persons, and systems receiving nonsewage are also regulated under Code of Federal Regulations, title 40, parts 144 and 146.***

D'autre part, le calcul du débit journalier doit tenir compte du nombre de chambres à coucher mais également de l'utilisation de certains appareils sanitaires. Le calcul doit être réalisé selon les spécifications de l'article 7080.1060 ci-dessous.

> ***7080.1860 DESIGN FLOW (GALLONS PER DAY).***
>
> TABLE IV
>
Number of bedrooms	Classification of dwelling			
	I	II	III	IV
	Gallons per day			
2 or less	300	225	180	*
3	450	300	218	*
4	600	375	256	*
5	750	450	294	*
6	900	525	332	*
>
> **** Flows for Classification IV dwellings are 60 percent of the values as determined for Classification I, II, or III systems.***

For more than six bedrooms, the design flow is determined by the following formulas:

Classification I: Classification I dwellings are those with more than 800 square feet per bedroom, when the dwelling's total finished floor area is divided by the number of bedrooms, or where more than two of the following water-use appliances are installed or anticipated: clothes washing machine, dishwasher, water conditioning unit, bathtub greater than 40 gallons, garbage disposal, or self-cleaning humidifier in furnace. The design flow for Classification I dwellings is determined by multiplying 150 gallons by the number of bedrooms.

Classification II: Classification II dwellings are those with 500 to 800 square feet per bedroom, when the dwelling's total finished floor area is divided by the number of bedrooms, and where no more than two of the water-use appliances listed in Classification I are installed or anticipated. The design flow for Classification II dwellings is determined by adding one to the number of bedrooms and multiplying this result by 75 gallons.

Classification III: Classification III dwellings are those with less than 500 square feet per bedroom, when the dwelling's total finished floor area is divided by the number of bedrooms, and where no more than two of the water-use appliances listed in Classification I are installed or anticipated. The design flow for Classification III dwellings is determined by adding one to the number of bedrooms, multiplying this result by 38 gallons, then adding 66 gallons.

Classification IV: Classification IV dwellings are dwellings designed under part 7080.2240.

6.3 DENSITÉ MAXIMALE : Densité maximale des installations septiques

Les documents consultés ne contiennent pas de norme relative à la densité ou à l'impact cumulatif des installations septiques.

6.4 REJETS : Rejets en surface

Cet élément n'est pas traité pour ce territoire selon le document d'appel d'offres.

6.5 CONTAMINANTS : Contaminants encadrés

Les règlements encadrent les contaminants généralement rencontrés dans des eaux usées de nature domestique (DBO5, MES, huile et graisse, azote, phosphore, coliformes fécaux). L'effluent des fosses septiques doit respecter des paramètres de DBO et DBO5, matières en suspension et huiles et graisses. (article 7080.2150).

> ***7080.2150 FINAL TREATMENT AND DISPERSAL.***
>
> ***Subp. 3. Other technical requirements for systems. Items A to M are required for specific designs as determined in parts 7080.2200 to 7080.2400.***
>
> ***K. Sewage tank effluent concentrations to the soil dispersal system must not exceed a BOD concentration of 170 mg/l, a CBOD5 concentration of 125 mg/l, a TSS concentration of 60 mg/l, or an oil and grease concentration of 25 mg/l.***

Les autres contaminants encadrés sont illustrés au tableau 3 du règlement 7083. (article 7083.4030).

> ***7083.4030 PRODUCT PERFORMANCE REQUIREMENTS FOR PROPRIETARY TREATMENT PRODUCTS.***
>
> ***TABLE III***

<table>
<tr><td>Treatment component / sequence category</td><td colspan="6">Product performance requirements
Treatment system performance testing levels</td></tr>
<tr><td rowspan="8">Category A:

Designed to treat sewage with strength typical of a residential source when septic tank effluent is anticipated to be equal to or less than treatment level C</td><td>Level</td><td>CBOD5 (mg/l)</td><td>TSS (mg/l)</td><td>O&G (mg/l)</td><td>FC (#/100ml)</td><td>Nutrient (mg/l)</td></tr>
<tr><td>A</td><td>15</td><td>15</td><td>-</td><td>1000</td><td>-</td></tr>
<tr><td>A-2</td><td>15</td><td>15</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>B</td><td>25</td><td>30</td><td>-</td><td>10 000</td><td>-</td></tr>
<tr><td>B-2</td><td>25</td><td>30</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>C</td><td>125*</td><td>60</td><td>25</td><td>-</td><td>-</td></tr>
<tr><td>Total nitrogen</td><td>-</td><td>-</td><td>-</td><td>-</td><td><20, or actual value</td></tr>
<tr><td>Total phosphorus</td><td>-</td><td>-</td><td>-</td><td>-</td><td><5, or actual value</td></tr>
<tr><td>Category B:

Designed to treat high-strength sewage when septic tank effluent is anticipated to be greater than treatment level C,</td><td colspan="6">All of the following requirements must be met:

(1) all full test averages must meet level C; and
(2) the treatment capacity of the product tested in pounds per day for CBOD5 must be reported.</td></tr>
</table>

including restaurants, grocery stores, mini-marts, group homes, medical clinics, residences, etc.	
Total nitrogen and phosphorus reduction in Categories A and B	Test results must establish product performance effluent quality meeting levels TN and TP, when presented as the full test average.

* BOD_5 = 170 mg/l

> ***Values for levels A, A-2, B, and B-2 are 30-day values (averages for $CBOD_5$, TSS, and geometric mean for FC). All 30-day averages throughout the test period must meet these values in order to be registered at these levels. Values for levels C, TN, and TP are derived from full test averages.***

Les modalisés encadrant la nécessité d'entretiens et éventuellement d'échantillonnage doit être soumise au moment de l'émission d'un permis. Le plan d'entretiens doit prévoir les opérations à être réalisés par le propriétaire et celles à être réalisées par un tiers qualifié le cas échéant.

> ***7082.0600 SYSTEM MANAGEMENT.***
>
> ***Subpart 1. Management plans.***
>
> ***A. Local units of government must require management plans for all new or replacement SSTS as described in parts 7080.2210 to 7080.2400. These plans must be submitted to the local government before issuance of a construction permit.***
>
> ***B. Management plans must include:***
>
> ***(1) maintenance requirements, including frequency;***
>
> ***(2) operational requirements, including which tasks the owner can perform and which tasks a licensed service provider or maintainer must perform;***
>
> ***(3) monitoring requirements;***
>
> ***(4) requirements that the owner notify the local unit of government when management plan requirements are not met;***
>
> ***(5) disclosure of the location and condition of the additional soil treatment and dispersal area on the lot or serving that residence; and***
>
> ***(6) other requirements as determined by the local unit of government.***

Il n'y a pas d'autre exigence de suivi des contaminants.

6.6 CERTIFICATION : Entité responsable d'effectuer la certification des différents intervenants et des technologies

C'est l'agence « Pollution Control Agency » qui est responsable de la certification des intervenants selon différentes catégories de domaine de pratique. Le processus inclut la formation préalable, l'évaluation, la reconnaissance des acquis et la formation continue. La plupart des tâches associées au domaine nécessitent une licence sauf certaines tâches exemptées à l'article 7083.0700 comme le suivi des installations par le propriétaire de sa résidence sous certaines réserves.

> ***7083.0700 LICENSES.***
>
> ***A state SSTS license applicable to the type of work being performed is required for any business that conducts work to design, install, repair, maintain, operate, or inspect all or part of an SSTS. A license is also required to land spread septage and operate a sewage collection system discharging to an SSTS. Property owners that employ a business to perform this work shall hire a business that is licensed according to this chapter. Individuals exempt from a state SSTS license must follow all applicable local, state, and federal requirements. A license is not required for: [...] H.an individual who performs tasks identified in the system's management plan that do not require a maintainer or service provider license for a dwelling that is owned by the individual and functions solely as a dwelling or seasonal dwelling for that individual; or [...]***

> ***7080.1100 DEFINITIONS.***
>
> ***Subp. 17. Commissioner. "Commissioner" means the commissioner of the Pollution Control Agency.***

> ***7083.1020 SSTS INDIVIDUAL CERTIFICATION AND TRAINING PROGRAM.***
>
> ***Subpart 1.Purpose.Parts 7083.1020 to 7083.1090 establish the SSTS individual certification and training program. This program establishes training, experience, and examination requirements for SSTS individual certification. An individual is allowed to be certified in the following specialty areas:***
>
> ***A. designer;***
>
> ***B. advanced designer;***
>
> ***C. inspector;***
>
> ***D. advanced inspector;***
>
> ***E. installer;***

F. maintainer; and

G. service provider.

Subp. 2. Program components.

An individual must successfully complete the following components for a specialty area to qualify for certification in that specialty area:

A.training described under part 7083.1030;

B.examination described under part 7083.1040;

C.experience described under part 7083.1050; and

D.continuing education described under part 7083.1060.

La certification des systèmes de traitement avancés est également sous la responsabilité de l'agence « Pollution Control Agency ». Le règlement 7083 fait aussi référence à certains standards internationaux (NSF, CEN, etc.).

PRODUCT REGISTRATION

7083.4000 PRODUCT REVIEW AND REGISTRATION PROCESS.

Subpart 1.General.

A. The commissioner shall develop a product review and registration process and maintain a list of registered sewage treatment and distribution products for SSTS.

B. The commissioner shall develop recommended standards and guidance to assist local units of government in permitting different types of sewage treatment technologies and sewage distribution technologies, including the following five categories:

(1) public domain treatment technologies, such as sand filters;

(2) proprietary treatment technologies, such as manufactured aerobic treatment systems;

(3) public domain distribution technologies, such as drainfield rock or generic drainfield rock substitutes;

(4) proprietary distribution technologies, such as gravelless distribution products; and

(5) proprietary drip dispersal systems.

C. Sewage technologies shall have standards described in this chapter or agency recommended standards and guidance before local units of government are

allowed to permit them. Recommended standards and guidance must include information and detail, such as application, design, installation, operation, monitoring and maintenance, and performance expectations, and sources of the information.

Subp. 2. Proprietary treatment products; certification and registration.

A. To qualify for product registration, manufacturers desiring to sell or distribute proprietary treatment products shall:

(1) verify product performance through testing using the testing protocol established in Table I in part 7083.4010 and register their product with the commissioner using the process described in parts 7083.4000 to 7083.4120;

(2) report test results of influent and effluent sampling obtained throughout the testing period, including normal and stress loading phases, for evaluation of constituent reduction according to Table II in part 7083.4020;

(3) demonstrate product performance according to Table III in part 7083.4030. All 30-day averages and geometric means obtained throughout the test period must meet the identified threshold values to qualify for registration at that threshold level; and

(4) verify bacteriological reduction according to part 7083.4060, for registration at Levels A and B in Table III in part 7083.4030.

B. Manufacturers verifying product performance through testing according to the following standards or protocols must have product testing conducted by a qualified, third-party testing facility. Product performance testing must be consistent with the following:

(1) National Sanitation Foundation (NSF) International, Residential Wastewater Treatment Systems, Standard 40 (July 2000). The standard is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change;

(2) National Sanitation Foundation (NSF) International, Wastewater Treatment Systems - Nitrogen Reduction, NSF/ANSI 245 (2007). The standard is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change;

(3) Environmental Protection Agency (EPA) and National Sanitation Foundation (NSF), Protocol for the Verification of Wastewater Treatment Technologies (April 2001). The protocol is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change;

(4) Environmental Protection Agency (EPA) Environmental Technology Verification (ETV) Program, Protocol for the Verification of Residential Wastewater Treatment Technologies for Nutrient Reduction (November 2000).

> ***The protocol is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change;***
>
> ***(5) European Committee for Standardization (CEN), Small Wastewater Treatment Systems for up to 50 PT - Part 3: Packaged and/or Site Assembled Domestic Wastewater Treatment Plants, EN 12566-3 (October 2003). The standard is incorporated by reference, is available through the Minitex interlibrary loan system, and is not subject to frequent change;***
>
> ***(6) protocol for bacteriological reduction described in part 7083.4060; and***
>
> ***(7) other equivalent protocols and standards consistent with the standards and protocols in subitems (1) to (6) to verify product performance as approved by the commissioner.***
>
> ***C. Treatment levels used in part 7083.4030 are not intended to be applied as field compliance standards. Their intended use is to establish treatment product performance in a product testing setting under established protocols by qualified testing entities.***

Il n'y a pas d'autre exigence de certification.

6.7 CAPACITÉ : Capacité des fosses septiques

L'article 7080.1930 du règlement détermine la capacité des fosses septiques. La capacité des fosses est une capacité effective « liquid minimum capacities ». Le volume des fosses septiques des résidences est calculé selon le nombre de chambres à coucher.

> ***7080.1930 SEPTIC TANK CAPACITY.***
>
> ***Subpart 1. Dwellings. The liquid capacity of septic tanks must be at least as large as the liquid capacities given in Table V.***
>
> TABLE V
>
Number of bedrooms	Septic tank liquid minimum capacities (gallons)
3 or less	1,000
4 or 5	1,500
6 or 7	2,000
8 or 9	2,500
>
> ***Where more than nine bedrooms are present, the septic tank capacity must be calculated by the following formula: 2,500 + ([# of bedrooms - 9] x 250).***
>
> ***Subp. 2. Garbage disposals. If a garbage disposal unit is anticipated or installed in a dwelling, the septic tank capacity must be at least 50 percent greater than that required in subpart 1 and must include either multiple compartments or multiple tanks. In addition, an effluent screening device is recommended.***
>
> ***[...]***
>
> ***Subp. 7. Septic tank capacity for other establishments. Total septic tank liquid capacity for other establishments with domestic strength waste as described in part 7080.1550, subpart 2, item B, subitem (1), is determined by multiplying the design flow by 3.0 if receiving sewage under gravity flow, by multiplying the design flow by 4.0 if receiving sewage under pressure flow, or in accordance with subpart 6. Additional design considerations, such as equalization tanks, additional capacity, grease interceptors, or secondary treatment, are required for influent concentrations that exceed the levels identified in part 7080.1550, subpart 2, item B, subitem (1).***

Le règlement prévoit la possibilité de raccorder plus d'une fosse en série pour atteindre le volume minimale requis.

> ***7080.1940 MULTIPLE SEPTIC TANKS.***

> ***A. If more than one septic tank is used to obtain the required liquid capacity as determined in part 7080.1930, septic tanks must be connected in series or employ multiple collection systems.***
>
> ***B. When tanks are connected in series, each tank or compartment must contain at least 25 percent of the required total liquid capacity.***

Une fosse septique recevant seulement des eaux ménagères peut bénéficier d'une réduction de volume selon les dispositions de l'article 7080.2240.

> ***7080.2240 GRAY WATER SYSTEMS.***
>
> ***Subpart 1. General. To qualify as a gray water system, the system must meet or exceed the following requirements:***
>
> ***A. employ 60 percent of the flow values in parts 7080.1850 to 7080.1885;***
>
> ***B. meet or exceed applicable technical requirements of parts 7080.1900 to 7080.2030, 7080.2050, and 7080.2100, except as modified in this part;***
>
> ***C. provide flow measurement if a pump is to be employed;***
>
> ***D. meet or exceed the requirements of parts 7080.2210 to 7080.2230;***
>
> ***E. meet or exceed requirements of part 7080.2150, subparts 2 and 3; and***
>
> ***F. meet the requirements of subparts 2 and 3.***
>
> ***Subp. 2. Toilet waste. Toilet waste must not be discharged to a gray water system.***
>
> ***Subp. 3. Sewage tank. The liquid capacity of a gray water septic tank serving a dwelling must be based on the number of bedrooms existing and anticipated in the dwelling served and shall be at least as large as the capacities given in Table X.***

TABLE X

Number of bedrooms (gallons)	Tank liquid capacity
3 or less	750
4 or 5	1000
6 or 7	1250
8 or 9	1500

For ten or more bedrooms, the gray water septic tank shall be sized as: (1,500 + ((# of bedrooms - 9) x 150)).

6.8 VIDANGE : Encadrement de la vidange des fosses septiques

Le règlement prévoit que la vidange des fosses septiques doit être réalisée en fonction du mesurage de l'écume et des boues (article 7080.2450). Cette opération doit être effectuée au minimum à tous les 3 ans. Conséquemment, la vidange doit être effectuée selon l'accumulation des solides. Un rapport de vidange doit également être remis au propriétaire (règlement 7083, article 7083.0770). L'obligation de remettre cette preuve aux autorités n'est toutefois pas prévue mais elle doit être conservée pour une période de 5 ans.

> ***7080.2450 MAINTENANCE.***
>
> ***[…]***
>
> ***Subp. 2. Frequency of assessment. The owner of an ISTS or the owner's agent shall regularly, but in no case less frequently than every three years:***
>
> ***A. assess whether sewage tanks leak below the designed operating depth and whether sewage tank tops, riser joints, and riser connections leak through visual evidence of major defects; and***
>
> ***B. measure or remove the accumulations of scum, grease, and other floating materials at the top of each septic tank and compartment, along with the sludge, which consists of the solids denser than water.***
>
> ***Subp. 3. Removal of material.***
>
> ***A. All solids and liquids must be removed by pumping from all tanks or compartments in which the top of the sludge layer is less than 12 inches from the bottom of the outlet baffle or transfer hole or whenever the bottom of the scum layer is less than three inches above the bottom of the outlet baffle or transfer hole. Total sludge and scum volume must not be greater than 25 percent of the tank's liquid capacity.***
>
> ***[…]***

Le règlement administratif du chapitre 7083 prévoit les modalités de cette démarche devant être réalisée par un professionnel licencié.

> ***7083.0770 MAINTENANCE LICENSE.***
>
> ***Subpart 1.Authorization.***
>
> ***A licensed maintenance business is authorized to measure scum and sludge depths in sewage tanks for the accumulation of solids and removing these deposits; remove solids and liquids from toilet waste treatment devices; transport septage; land apply septage or dispose of septage in a treatment facility; identify problems related to sewage tanks, baffles, maintenance hole covers, extensions, and pumps and make the repairs; evaluate sewage tanks, pump tanks,***

distribution devices, valve boxes, or drop boxes for leakage; identify cesspools, seepage pits, leaching pits, and drywells; and clean supply pipes and distribution pipes for all SSTS.

Subp. 2. Responsibilities.Maintenance licensees must:

A. record pump-out date, gallons removed, any tank leakage below or above the operating depth, the access point used to remove the septage, the method of disposal, the reason for pumping, any safety concerns with the maintenance hole cover, and any troubleshooting or repairs conducted. This information must be submitted to the homeowner within 30 days after the maintenance work is performed. Maintenance business pumping record information must be maintained by the business for a period of five years;

B. observe and provide written reports of any noncompliance to the system owner within 30 days; and

C. obtain a signed statement if the owner refuses to allow the removal of solids and liquids through the maintenance hole.

6.9 SUIVI : Nécessité de faire le suivi des installations septiques

Le règlement administratif prévoit des obligations relatives au suivi des installations septiques. D'abord, selon l'article 7082.0040 de ce règlement, les autorités locales doivent transmettre à l'État un rapport annuel. Ce rapport statistique doit contenir des informations telles que : le nombre de permis émis, le nombre de systèmes desservant des résidences, le nombre de systèmes desservant des résidences secondaires, le nombre de systèmes desservant d'autres bâtiments, une estimation du nombre de systèmes conformes, une description des problèmes rencontrés, etc.

De plus, les autorités locales doivent mettre en place un programme de suivi des installations septiques de leur territoire. Ce programme doit prévoir la procédure d'inspection, la fréquence, etc.

> ***7082.0700 INSPECTION PROGRAM FOR SUBSURFACE SEWAGE TREATMENT SYSTEMS.***
>
> ***Subpart 1. Inspection requirements. Local units of government must adopt and implement a construction inspection program for new construction and replacement SSTS to enforce requirements under this chapter. The construction inspection program must specify the frequency and times of inspections, specify the requirements of an inspection, establish an inspection protocol, provide for when an inspection cannot be completed in a timely manner, and, at a minimum, include the requirements for a compliance inspection under subparts 2 and 3, except for subpart 3, item E.***
>
> ***Subp. 2. Compliance inspection; new construction or replacement.***
>
> ***A. A compliance inspection for all new construction or replacement must be conducted:***
>
> ***(1) to ensure compliance with applicable requirements;***
>
> ***(2) to ensure compliance before issuance of a permit for the addition of a bedroom on property served by an SSTS, if the local unit of government issues permits for the addition of a bedroom, unless the requirements under part 7082.0500, subpart 3, item C, are met;***
>
> ***(3) by a qualified employee or licensed inspection business, authorized by the local unit of government, who is independent of the owner and the installer; and***
>
> ***(4) for an evaluation, investigation, inspection, recommendation, or other process used to prepare a disclosure if conducted by a party who is not the system owner. This disclosure action constitutes a compliance inspection and must be conducted according to this chapter.***

> ***B. A licensed inspection business that inspects an existing SSTS is allowed to subsequently design and install a new SSTS for that property, provided the inspection business is also licensed to design and install.***
>
> ***C. A licensed inspection business working on behalf of a local unit of government must not design or install a new or replacement system if there is a likelihood that the inspector or business will be responsible for permitting or inspecting the new or replacement system or system site.***
>
> ***D. A licensed inspection business may inspect an existing system that they designed or installed once it has been independently inspected.***
>
> ***E. A person working for or on behalf of a local unit of government is not allowed to use the person's position to solicit for private business gain.***

Enfin, l'échantillonnage des systèmes, lorsque requis lors de l'émissions du permis, doit être effectué par un professionnel qualifié.

> ***7083.0780 SERVICE PROVIDER LICENSE.***
>
> ***Subp. 2. Responsibilities.Service provider licensees must:***
>
> ***A. report sampling results, operational observations, system adjustments, and other management activities in compliance with local ordinances, management plans, or operating permit requirements; and***
>
> ***B. observe and provide written reports of any noncompliance to the system owner and the local unit of government within 30 days.***

Les modalités du plan d'entretiens soumis tel que les paramètres à analyser, le type de prélèvement, la fréquence et les conditions dans lesquelles ces modalités doivent ou non être appliquées ne sont pas détaillées au règlement et plutôt laissées au jugement de l'autorité responsable du traitement des demandes.

> ***7082.0600 SYSTEM MANAGEMENT.***
>
> ***Subpart 1. Management plans.***
>
> ***A. Local units of government must require management plans for all new or replacement SSTS as described in parts 7080.2210 to 7080.2400. These plans must be submitted to the local government before issuance of a construction permit.***
>
> ***B. Management plans must include:***
>
> ***(1) maintenance requirements, including frequency;***

> ***(2) operational requirements, including which tasks the owner can perform and which tasks a licensed service provider or maintainer must perform;***
>
> ***(3) monitoring requirements;***
>
> ***(4) requirements that the owner notify the local unit of government when management plan requirements are not met;***
>
> ***(5) disclosure of the location and condition of the additional soil treatment and dispersal area on the lot or serving that residence; and***
>
> ***(6) other requirements as determined by the local unit of government.***
>
> ***Subp. 2. SSTS operating permits.***
>
> ***A. Local units of government must issue and enforce an operating permit for SSTS specified in part 7082.0100, subpart 3, item K.***
>
> ***B. An operating permit must include:***
>
> ***(1) maintenance requirements, including frequency of maintenance;***
>
> ***(2) operational requirements;***
>
> ***(3) monitoring requirements;***
>
> ***(4) compliance limits and compliance boundaries;***
>
> ***(5) reporting frequency;***
>
> ***(6) a requirement that the permittee notify the local unit of government when permit requirements are not met. Corrective actions must be taken as directed by the local unit of government;***
>
> ***(7) disclosure of the location and condition of the additional soil treatment and dispersal system; and***
>
> ***(8) stipulation of acceptable and prohibited discharges.***

Il n'y a pas d'autre disposition relative au suivi des installations septiques.

6.10 RESTRICTIONS : Restrictions quant à la localisation des installations septiques

Les normes de localisation sont décrites à l'article 7080.2150 du règlement. Les marges de recul déterminées au règlement sont limitées à la protection des puits. Toutefois, le règlement renvoie à d'autres règlements de l'État et aux règlements locaux pour d'autres normes de localisation.

7080.2150 FINAL TREATMENT AND DISPERSAL.

Subp. 2. General technical requirements for all systems. All new construction or replacement ISTS must be designed to meet or exceed the provisions in items A to F. […]

F. ISTS components must be set back in accordance with Table VII.

TABLE VII

MINIMUM SETBACK DISTANCES (FEET)

Feature	*Sewage tank, holding tank, or sealed privy*	*Absorption area or unsealed privy*	*Building sewer or supply pipes*
Water supply wells	*	*	*
Buried water lines	*	*	*
Structures	*10*	*20*	
*Property lines **	*10*	*10*	
Ordinary high water level of public waters	***	***	

**** Setbacks from buried water lines and water supply wells are governed by chapters 4714 and 4725, respectively.***

***** Infringement on property line setbacks must be made through accepted local procedures.***

****** Setbacks from lakes, rivers, and streams are governed by chapters 6105 and 6120.***

La distance type d'un puits est de 50 pieds autant pour la partie étanche que non étanche d'une installation sauf exceptions. Le renvoi au Code de plomberie (chapter 4714) pour les conduites d'alimentation en eau n'établit pas de distances à respecter. Le code de plomberie mentionne que les parties de l'installation septique et les conduites d'alimentation en eau ne doivent pas se traverser ou se superposer.

La distance des cours d'eau est variable de 50 à 150 pieds selon la classification du type de cours d'eau (en milieu, forestier, agricole, touristique, etc.).

6.11 MILIEUX SENSIBLES :

En matière de protection des milieux sensibles, les règlements proposent quelques règles particulières. En ce qui concerne les lacs, cours d'eau et milieux humides, les seules dispositions relevées sont celles mentionnées au point précédent.

Le règlement n'encadre pas de façon particulière les milieux boisés. D'ailleurs, il n'y a pas de norme de localisation relative aux arbres.

Les terrains en fortes pentes ne semblent pas être une problématique. Malgré tout, les articles 7080.2210 et 7080.2230 du règlement contiennent des dispositions relatives aux terrains en pente.

> ***7080.2210 TRENCHES AND SEEPAGE BEDS.***
>
> ***Subp. 2. General. Seepage bed placement must be limited to areas having natural slopes of less than six percent.[…]***

> ***7080.2230 AT-GRADE SYSTEMS.***
>
> ***Subp. 2. Location of at-grade systems.***
>
> ***B. At-grade systems must not be installed in areas with slopes greater than 25 percent.***

D'autre part, le règlement prévoit que les installations générant un débit supérieur à 2500 gallons/jour (9463 L/jour) doivent faire l'objet de mesure de contrôle supplémentaire relative aux rejets d'azote. Cette mesure vise à réduire le risque d'impact sur les eaux souterraines.

> ***7080.2150 FINAL TREATMENT AND DISPERSAL.***
>
> ***Subp. 4. Systems with a design flow greater than 2,500 gallons per day. At a minimum, systems designed under this chapter with a design flow of greater than 2,500 gallons per day, which impact water quality of an aquifer, as defined in part 4725.0100, subpart 21, must employ best management practices for nitrogen reduction developed by the commissioner to mitigate water quality impacts to groundwater.***

Il n'y a pas d'autre norme relative à des milieux sensibles.

6.12 TOILETTES : Toilettes à compost, toilettes chimiques et toilettes à incinération

Les règlements consultés traitent très brièvement des toilettes alternatives. Les dispositions pertinentes sont reproduites ci-dessous.

> ***7080.1100 DEFINITIONS.***
>
> ***Subp. 86. Toilet waste treatment devices. "Toilet waste treatment devices" means other toilet waste apparatuses including incinerating, composting, biological, chemical, recirculating, or holding toilets or portable restrooms.***
>
> ***7080.2450 MAINTENANCE.***
>
> ***Subp. 4. Toilet waste treatment devices and privies.***
>
> ***A. For primitive dwellings using toilet waste treatment devices in low dwelling density areas, septage disposal from these devices by the owner must be in accordance with local ordinances. If no ordinance exists, the septage must not be discharged to surface waters, drainageways, steeply sloping areas, or wet areas in a manner or volume that is harmful to the environment or public health or that creates a nuisance. The material must be buried or covered with soil. For site conditions not met in this subpart, the solids disposal from toilet waste treatment devices shall be according to subpart 6 by a licensed maintenance business.***

6.13 PERMÉABILITÉ DU SOL :

Le règlement ne réfère pas à des plages de perméabilité tel que nous connaissons dans le cadre du RETEURI. Le concept de perméabilité fait plutôt référence à un taux de charge hydraulique par unité de superficie (gpd/ft²) selon la texture et la structure du sol (article 7080.2150, tableau 7). De plus, le règlement permet aussi l'utilisation un taux de percolation pour établir le taux de charge hydraulique à appliquer (article 7080.2150, tableau 9a).

Selon ce dernier tableau, il est possible de construire un système de traitement des eaux usées par procédé d'infiltration dans le sol ayant une vitesse de percolation d'au moins 120 min/po (47 min/cm). Ce qui correspond approximativement à la limite entre un sol peu perméable et imperméable dans le RETEURI. Selon notre compréhension, un sol imperméable dont le temps de percolation excède 120 min/ po (47 min/cm) ne permet pas d'installer un système de traitement par infiltration dans le sol.

TABLE IXa

LOADING RATES FOR DETERMINING BOTTOM ABSORPTION AREA AND ABSORPTION RATIOS USING PERCOLATION TESTS

Percolation rate ***(MPI)***	Treatment level C absorption area loading rate ***(gpd/ft2)***	Treatment level C mound absorption ***ratio***	Treatment levels A, A-2, B, and B-2 absorption area loading rate ***(gpd/ft2)***	Treatment levels A, A-2, B, and B-2 mound absorption ***ratio***
<0.1	***-***	***1.0***	***-***	***1.0***
0.1 to 5	***1.2***	***1.0***	***1.6***	***1.0***
0.1 to 5 (fine sand and loamy ***fine sand)***	***0.6***	***2.0***	***1.0***	***1.6***
6 to 15	***0.78***	***1.5***	***1***	***1.6***
16 to 30	***0.6***	***2.0***	***0.78***	***2.0***
31 to 45	***0.5***	***2.4***	***0.78***	***2.0***
46 to 60	***0.45***	***2.6***	***0.6***	***2.6***
61 to 120	***-***	***5.0***	***0.3***	***5.3***
>120	***-***	***-***	***-***	***-***

Le règlement ne permet pas la mise en place de systèmes de traitement avec un rejet en surface. Ce type de système doit être soumis à un processus d'autorisation particulier en fonction de normes nationales (article 7080.1050).

> ***This chapter does not regulate systems that discharge to the ground surface or surface waters. Those systems require a national pollution discharge elimination system permit. 7080.1050***

Le règlement ne contient pas de disposition qui impose une restriction à l'installation d'une fosse de rétention. Le règlement ne contient pas, non plus, d'obligation à l'installation d'une telle fosse. L'article 7080.2290 traite plus en détails des fosses de rétention.

D'autre part, le règlement catégorise des systèmes de traitement de type III, IV et V aux articles 7080.2300, 7080.2350 et 7080.2400. Ces types de systèmes de traitement permettent, compte tenu d'une conception adaptée et de leur niveau de traitement, d'être construits dans de mauvaises conditions de sol (sol imperméable et faible épaisseur de sol). Dans ce cas, le règlement introduit donc, pour ces systèmes, une approche par performance.

Par exemple, une installation hors-sol pourrait être permise dans des conditions de sol imperméable, dans la mesure où il est démontré que l'eau a subi un traitement adéquat avant l'application et que la conception permet d'assurer que les eaux auront traversé une couche de sol suffisante pour ne pas constituer une source de nuisance.

> ***7080.2300 TYPE III SYSTEMS.***
>
> ***A system that deviates from the requirements in parts 7080.2210 to 7080.2240 is a Type III system. Deviations from the standards in parts 7080.2210 to 7080.2240 must be submitted to the local unit of government for approval or denial. However, no deviation is allowed from the following standards and at a minimum a Type III system must:***
>
> ***A. employ design flow values in parts 7080.1850 to 7080.1885;***
>
> ***B. meet technical requirements of part 7080.2050;***
>
> ***C. meet the requirements of parts 7080.1900 to 7080.2030;***
>
> ***D. meet the requirements of part 7080.2100 with mound and at-grade systems required to have pressure distribution;***
>
> ***E. provide flow measurement;***
>
> ***F. meet the requirements of part 7080.2150, subparts 2 and 4;***
>
> ***G. meet the requirements of part 7080.2150, subpart 3, items A, B, C, F, I, J, and L; and***

H. follow the absorption area loading rates in part 7080.2150, subpart 3, item E, Tables IX and IXa. If the site cannot accommodate a soil treatment and dispersal system sized in accordance with Table IX or IXa in part 7080.2150, subpart 3, item E, a smaller soil treatment and dispersal system is allowed to be constructed if it employs flow restriction devices that do not allow loadings in excess of those in Table IX or IXa of part 7080.2150, subpart 3, item E. In those cases where a loading rate or mound absorption ratio is not listed in Tables IX and IXa in part 7080.2150, subpart 3, item E, an alternative loading rate or absorption ratio is allowed to be proposed.

7080.2350 TYPE IV SYSTEMS.

Subpart 1. General. A system designed according to this part is considered a Type IV system. The system must:

A. employ design flow values in parts 7080.1850 to 7080.1885;

B. meet or exceed applicable technical requirements of parts 7080.1900 to 7080.2030, 7080.2050, and 7080.2100;

C. meet or exceed the requirements of part 7080.2150, subpart 2;

D. meet the requirements of part 7080.2150, subpart 3, except as modified in this part;

E. meet the requirements of Table XI in subpart 2; and

F. meet soil dispersal requirements of parts 7080.2210, 7080.2220, and 7080.2230, except that the reductions in part 7080.2210, subpart 3, item B, are not applicable.

Subp. 2. Table XI.

TREATMENT COMPONENT PERFORMANCE LEVELS AND METHOD OF DISTRIBUTION BY TEXTURE GROUP1

Vertical separation (inches)	Texture group[2]		
	All sands and loamy sands	Sandy loam, loam, silt loam	Clay, clay loams
12 to 17[3]	Treatment level A Uniform distribution Timed dosing	Treatment level A Uniform distribution Timed dosing	Treatment level A Uniform distribution Timed dosing
18 to 35[3]	Treatment level B Uniform distribution Timed dosing	Treatment level B Uniform distribution Timed dosing	Treatment level B Uniform distribution
36+[3]	Treatment level A-2 or B-2 Uniform distribution Treatment level C	Treatment level A-2 or B-2 Uniform distribution Treatment level C	Treatment level A-2 or B-2 Uniform distribution Treatment level C

[1]The treatment component performance levels correspond with those established for treatment components under the product testing requirements in Table III in part 7083.4030.

[2] With less than 50 percent rock fragments.

[3] Additional vertical separation distance is required as determined in part 7080.2150, subpart 3, item C, subitem (1), unit (b).

Subp. 3. Soil loading rates. The absorption area and mound absorption ratio must be sized according to Table IX or IXa.

7080.2400 TYPE V SYSTEMS.

A system designed according to this part is considered a Type V system. The system must:

A. employ design flow values in parts 7080.1850 to 7080.1885;

B. meet the requirements of part 7080.2150, subpart 2; and

C. be designed with a vertical separation that ensures adequate sewage dispersal and treatment. Design factors to consider include, but are not limited to, effluent quality, loading rates, groundwater mounding if loading rates are in excess of those in part 7080.2150, subpart 3, item E, Table IX or IXa, loading methods, and soil conditions. ISTS must not contaminate underground waters or zones of periodic saturation with viable fecal organisms.

6.14 FORTES CONTRAINTES : Solutions pour les sites à fortes contraintes

Le règlement contient des dispositions pour permettre des solutions dans des situations de fortes contraintes. Tout d'abord, l'article 7080.2270 encadre la construction des installations septiques dans les zones inondables.

> ***7080.2270 FLOODPLAIN AREAS.***
>
> ***Subpart 1. General. ISTS must be designed under this part if the system is proposed to be located in a floodplain. A system located in a floodplain must meet or exceed the following requirements:***
>
> ***A. employ flow values in parts 7080.1850 to 7080.1885;***
>
> ***B. meet or exceed applicable technical requirements of parts 7080.1900 to 7080.2030, 7080.2050, and 7080.2100, except as modified in this part;***
>
> ***C. provide flow measurement if a pump is to be employed;***
>
> ***D. meet or exceed the requirements of parts 7080.2210 to 7080.2230;***
>
> ***E. meet or exceed requirements of part 7080.2150, subparts 2 and 3, except as modified in this subpart; and***
>
> ***F. meet the requirements of subparts 2 to 11.***
>
> ***Subp. 2. State and local requirements. The allowed use of systems in floodplains must be according to state and local floodplain requirements.***
>
> ***Subp. 3. Location of system. An ISTS must not be located in a floodway and, whenever possible, placement within any part of the floodplain should be avoided. If no alternative exists, a system is allowed to be placed within the flood fringe if the requirements in subparts 4 to 11 are met.***
>
> ***Subp. 4. Openings. There must be no inspection pipe or other installed opening from the distribution media to the soil surface.***
>
> ***Subp. 5. Highest ground. An ISTS must be located on the highest feasible area of the lot and must have location preference over all other improvements except the water supply well. If the ten-year flood data are available, the bottom of the distribution media must be at least as high as the elevation of the ten-year flood.***
>
> ***Subp. 6. Pump. If a pump is used to distribute effluent to the soil treatment and dispersal system, provisions shall be made to prevent the pump from operating when inundated with floodwaters.***
>
> ***Subp. 7. Raising elevation. When it is necessary to raise the elevation of the soil treatment system to meet the vertical separation distance requirements, a mound system as specified in part 7080.2220 is allowed to be used with the following additional requirements:***

> ***A. the elevation of the bottom of the mound bed absorption area must be at least one-half foot above the ten-year flood elevation if ten-year flood data are available;***
>
> ***B. inspection pipes must not be installed unless the top of the mound is above the 100-year flood elevation; and***
>
> ***C. the placement of clean sand and other fill must be done according to any community-adopted floodplain management ordinance.***
>
> ***Subp. 8. Inundation of top. When the top of a sewage tank is inundated, the dwelling must cease discharging sewage into it.***
>
> ***Subp. 9. Backflow. Backflow prevention of liquid into the building when the system is inundated must be provided. If a holding tank is used, the system must be designed to permit rapid diversion of sewage into the holding tank when the system is inundated.***
>
> ***Subp. 10. Holding tank. If a holding tank is used to serve a dwelling, the holding tank's liquid capacity must equal 100 gallons times the number of bedrooms times the number of days between the ten-year stage on the rising limb of the 100-year flood hydrograph and the ten-year stage on the falling limb of the hydrograph, or 1,000 gallons, whichever is greater. The holding tank must be accessible for removal of tank contents under flooded conditions.***
>
> ***Subp. 11. Water level above top. Whenever the water level has risen above the top of a sewage tank, the tank must be pumped to remove all solids and liquids after the flood has receded and before use of the system is resumed.***

Le règlement prévoit aussi la possibilité d'autoriser des dérogations « variance » aux normes. De cette manière, les projets comportant des contraintes particulières (rive, littoral, faible épaisseur de sol, localisation, etc.) peuvent être analysés au cas par cas par les autorités locales (article 7080.1200).

> ***7080.1200 ADMINISTRATION OF DESIGN STANDARDS.***
>
> ***Subp. 3. Variance procedures. The standards in this chapter are provided to be incorporated into a local ordinance according to chapter 7082 and Minnesota Statutes, section 115.55. Variance requests to the standards made by an owner or owner's agent must be issued or denied by the local unit of government. Local units of government shall not issue variances for part 7080.2150, subpart 2, items A to D.***

Tel que précisé à l'article 7080.1200, ce mécanisme de dérogation exclut les dispositions suivantes :

7080.2150 FINAL TREATMENT AND DISPERSAL.

Subp. 2. General technical requirements for all systems. All new construction or replacement ISTS must be designed to meet or exceed the provisions in items A to F.

A. All treatment and dispersal methods must be designed to conform to all applicable federal, state, and local regulations.

B. Treatment and dispersal processes must prevent sewage or sewage effluent contact with humans, insects, or vermin.

C. Treatment and dispersal of sewage or sewage effluent must be in a safe manner that adequately protects from physical injury or harm.

D. An unsaturated zone in the soil must be maintained between the bottom of the soil treatment and dispersal system and the periodically saturated soil or bedrock during loading of effluent.

6.15 ÉTUDES : Études préalables et mise aux normes

Une étude de caractérisation de site « design phase 1 : site evaluation » est requise préalablement à la construction ou la modification d'une installation septique (articles 7080.1700, 7080.1710, 7080.1720 et 7080.1730). Ces articles sont reproduits en annexe du présent chapitre. De plus, ces documents doivent être préparés par une entreprise ou un professionnel certifié par l'État (article 7080.1670).

> ***7080.1670 REQUIREMENTS TO CONDUCT WORK.***
>
> ***Systems must be designed, installed, inspected, operated, and maintained by appropriately licensed businesses and certified individuals according to part 7083.0700 and any other applicable state requirements.***

Le règlement administratif contient des obligations minimales que les autorités locales doivent incorporer à leurs règlements locaux, entre autres, l'obligation pour le propriétaire d'un système de produire un plan d'entretien et d'opération « system management » (articles 7082.0500, et 7082.0600).

> ***7082.0500 PERMIT PROGRAM FOR SSTS.***
>
> ***Subpart 1. General requirements for permit program.***
>
> ***A. Local units of government shall enforce local ordinances that regulate SSTS through permitting programs that meet the minimum requirements of this chapter.***
>
> ***B. A local unit of government with an SSTS ordinance adopted under part 7082.0040, subparts 2 and 3, must have a permit program that specifically addresses the following:***
>
> ***(1) permit application requirements;***
>
> ***(2) site, design, and soil review and approval requirements and procedures;***
>
> ***(3) record keeping; and***
>
> ***(4) reporting to the commissioner.***
>
> ***C. Permits must be required for all new construction and replacement. A local unit of government is authorized to require permits for all or certain types of SSTS repairs.***
>
> ***D. A local unit of government with a local ordinance to regulate bedroom additions must comply with subpart 3, item C.***
>
> ***Subp. 2. SSTS permit application requirements. SSTS permit applications must require the submittal of exhibits necessary for issuing a permit as described in this chapter, along with general requirements for identifying the property and***

owners, a site evaluation report, a design report, a management plan, and any other information requested by the local unit of government pertinent to this process. Exhibits for site evaluation, design, and applicable construction information must be complete and include a certified statement from the certified person who conducted or oversaw the work. An approval process must be developed to address changes in the approved design that served as the basis for issuing a permit.

Subp. 3. Permit approval requirements and procedures. The permit program must include the requirements in items A to D.

A. A qualified employee with jurisdiction or licensed inspection business who is authorized by the local unit of government must review the permit application and other exhibits to determine whether site evaluation procedures, observations, and conclusions are accurate and fulfill applicable requirements and whether the proposed system will meet applicable requirements. An infield verification of the periodically saturated soil or bedrock at the proposed soil treatment and dispersal sites must be conducted by a qualified employee with jurisdiction or licensed inspection business who is authorized by the local unit of government. An advanced inspector is required to perform the duties listed in this item for Type IV and Type V ISTS as described in parts 7080.2350 and 7080.2400, ISTS design flow of greater than 2,500 gallons per day, and MSTS. The infield verification of the periodically saturated soil or bedrock must occur prior to issuance of the certificate of compliance.

B. The local unit of government must review and either approve or deny the permit application before issuing a construction permit. Construction must not be initiated until a construction permit is granted. Final approval of the system must be evidenced by issuance of a certificate of compliance[10].

C. Local units of government shall not issue a building permit or variance for a bedroom addition on property served by a system unless the SSTS is in compliance with applicable requirements, as evidenced by a certificate of compliance. A local unit of government is authorized to temporarily waive the certificate of compliance requirement in this item for a bedroom addition permit for which application is made during the period from November 1 to April 30, provided a compliance inspection of the system is performed by the following June 1 and the applicant submits a certificate of compliance by the following September 30. This item does not apply if the local unit of government does not have an ordinance requiring a permit to add a bedroom.

[10] 7082.0700 INSPECTION PROGRAM FOR SUBSURFACE SEWAGE TREATMENT SYSTEMS […]
D. A certificate of compliance or notice of noncompliance for new construction or replacement must be signed by a licensed inspection business or by a qualified employee certified as an inspector who is authorized by the local unit of government.

D. A licensed inspection business working on behalf of a local unit of government must not design or install systems that the business will be responsible for permitting or inspecting as part of its local government duties.

7082.0600 SYSTEM MANAGEMENT.

Subpart 1. Management plans.

A. Local units of government must require management plans for all new or replacement SSTS as described in parts 7080.2210 to 7080.2400. These plans must be submitted to the local government before issuance of a construction permit.

B. Management plans must include:

(1) maintenance requirements, including frequency;

(2) operational requirements, including which tasks the owner can perform and which tasks a licensed service provider or maintainer must perform;

(3) monitoring requirements;

(4) requirements that the owner notify the local unit of government when management plan requirements are not met;

(5) disclosure of the location and condition of the additional soil treatment and dispersal area on the lot or serving that residence; and

(6) other requirements as determined by the local unit of government.

Subp. 2. SSTS operating permits.

A. Local units of government must issue and enforce an operating permit for SSTS specified in part 7082.0100, subpart 3, item K.

B. An operating permit must include:

(1) maintenance requirements, including frequency of maintenance;

(2) operational requirements;

(3) monitoring requirements;

(4) compliance limits and compliance boundaries;

(5) reporting frequency;

(6) a requirement that the permittee notify the local unit of government when permit requirements are not met. Corrective actions must be taken as directed by the local unit of government;

(7) disclosure of the location and condition of the additional soil treatment and dispersal system; and

> ***(8) stipulation of acceptable and prohibited discharges.***

Les exigences (études, plans, rapports, etc.) ne sont pas différentes pour des travaux visant la modification d'une installation existante. À cet effet, les règlements contiennent des dispositions particulières pour les systèmes existants. Les règlements encadrent les situations de modification de système et les obligations de mise aux normes aux articles ci-dessous. L'article 7080.1500 vient notamment préciser plus en détail les modalités autrement très générales du « certificate of compliance » auquel réfère le règlement :

> ***7082.0700 INSPECTION PROGRAM FOR SUBSURFACE SEWAGE TREATMENT SYSTEMS.[...]***
>
> ***Subp. 3. Certificate of compliance; notice of noncompliance. [...]***
>
> ***B. The initial certificate of compliance must be issued if reasonable assurance is evident that the system was built according to applicable requirements as specified in the construction permit.***

> ***7080.1500 COMPLIANCE CRITERIA.***
>
> ***(...)***
>
> ***Subp. 3. Compliance criteria for new construction. An ISTS regulated under a current construction permit is considered compliant if it meets the applicable requirements of parts 7080.2150 to 7080.2400.***
>
> ***Subp. 4. Compliance criteria for existing systems. To be in compliance, an existing ISTS must meet the provisions of this subpart.***
>
> ***A. The ISTS must be protective of public health and safety. A system that is not protective is considered an imminent threat to public health or safety. At a minimum, a system that is an imminent threat to public health or safety is a system with a discharge of sewage or sewage effluent to the ground surface, drainage systems, ditches, or storm water drains or directly to surface water; systems that cause a reoccurring sewage backup into a dwelling or other establishment; systems with electrical hazards; or sewage tanks with unsecured, damaged, or weak maintenance hole covers. A determination of protectiveness for other conditions must be made by a qualified employee inspector or licensed inspection business.***
>
> ***B. The ISTS must be protective of groundwater. A system that is not protective is considered a system failing to protect groundwater. At a minimum, a system that is failing to protect groundwater is a system that is a seepage pit, cesspool, drywell, leaching pit, or other pit; a system with less than the required vertical separation distance described in items D and E; and a system not abandoned in***

accordance with part 7080.2500. A determination of the threat to groundwater quality for other conditions must be made by a qualified employee or licensed inspection business.

C. The ISTS must be operated, meet performance standards, and be managed according to its operating permit.

D. ISTS built after March 31, 1996, or in an SWF area as defined under part 7080.1100, subpart 84, must have at least a three-foot vertical separation or a vertical separation in compliance with part 7080.2350, subpart 2, Table XI. The local ordinance is allowed to provide for a reduced vertical separation for existing systems that were designed with at least a three-foot vertical separation distance.

The local ordinance must not allow more than a 15 percent reduction in the vertical separation distance. A 15 percent reduction is only allowed to account for settling of sand or soil, normal variation of measurements, and interpretations of the limiting layer conditions.

E. ISTS built before April 1, 1996, in areas that are not SWF areas as defined under part 7080.1100, subpart 84, must have at least two feet of vertical separation.

F. The vertical separation measurement for items D and E must be measured outside the area of system influence in an area of similar soil.

Subp. 5. Compliance criteria for systems with a flow of greater than 2,500 gallons per day. In addition to the requirements under subpart 4, systems designed under part 7080.2150, subpart 4, must demonstrate that the additional nutrient reduction component required under those items is in place and functioning.

Subp. 6. Compliance criteria for systems receiving replacement components. Components of an existing system that result in the system being in noncompliance must be repaired or replaced according to part 7082.0100, subpart 1. The repaired or replacement components must meet technical standards and criteria for new construction according to local ordinance. The remaining components of the existing system must result in the system being in compliance with subpart 4.

7082.0100 REQUIREMENTS FOR LOCAL ORDINANCES.

Subpart 1. Requirement. All SSTS ordinances must contain the provisions in items A to C.

A. A provision requiring the upgrade, replacement, repair, or discontinued use of a system failing to protect groundwater as described in part 7080.1500, subpart 4, item B, within a specified time period after the owner receives a notice of noncompliance.

> ***B. A provision requiring the upgrade, replacement, repair, or discontinued use of a system that represents an imminent threat to public health or safety as described in part 7080.1500, subpart 4, item A, within ten months after the owner receives a notice of noncompliance or within a shorter period if required***
>
> ***by an applicable local ordinance.***
>
> ***C. Local ordinance requirements regulating vertical separation for systems built before April 1, 1996, in systems that are not SWF as defined in part 7080.1100, subpart 84, must meet the requirements in part 7080.1500, subpart 4, item E.***

L'ajout de chambre à coucher est quant à lui traité spécifiquement comme situation. Il ne confère toutefois pas d'assouplissement à la démarche. La situation illustrée par cet article spécifique vise l'émission d'un permis de construction pour l'ajout d'une chambre à coucher dans une résidence dont l'installation était déjà surdimensionnée à cet effet tel que démontré par un « certificate of compliance ». Dans les faits cette situation ne nécessite conséquemment pas de modification à l'installation. L'ajout d'une chambre à coucher supplémentaire dans une résidence dont l'installation n'est pas conçue à cet effet est donc soumis aux mesures applicables courantes.

> ***7082.0500 PERMIT PROGRAM FOR SSTS.***
>
> ***Subp. 3. Permit approval requirements and procedures. The permit program must include the requirements in items A to D. [...]***
>
> ***C. Local units of government shall not issue a building permit or variance for a bedroom addition on property served by a system unless the SSTS is in compliance with applicable requirements, as evidenced by a certificate of compliance. A local unit of government is authorized to temporarily waive the certificate of compliance requirement in this item for a bedroom addition permit for which application is made during the period from November 1 to April 30, provided a compliance inspection of the system is performed by the following June 1 and the applicant submits a certificate of compliance by the following September 30. This item does not apply if the local unit of government does not have an ordinance requiring a permit to add a bedroom.***

Il n'y a pas d'autre disposition pertinente relative aux études préalables et à la mise aux normes.

6.16 AUTRES :

Éléments du Q-2, r.22 qui sont couverts par le territoire visé

Définitions	X
Hiérarchie du choix d'un système	
Obligation de vidange des fosses septiques	X
Méthodes pour établir la perméabilité du sol	X
Plages de perméabilité	X
Référence aux normes BNQ/NSF	X
Normes de construction des fosses construites sur place	X
Préfiltre	X
Norme spécifique au déboisement (élément épurateur classique)	
Conduite d'amenée, raccordements et ventilation	X
Champ d'application du Règlement/type d'eau	X
Prohibition de rejeter des eaux usées	X
Interdiction d'utiliser certains produits (désinfection de ces eaux usées)	X
Conditions d'émission des permis (plan, études, etc.)	X
Implication d'un professionnel compétent pour la conception (Ordre professionnels)	X
Désaffectation des systèmes	X
Gestion des boues et des autres résidus	X
Cheminement des eaux et des effluents	X
Normes de localisation pour les systèmes étanches et les systèmes non étanches	X
Normes techniques à respecter (matériaux, dimensions, etc.)	X
Conditions d'implantation des systèmes (pente, perméabilité, épaisseur de sol naturel, etc.)	X
Obligation d'entretien et/ou de maintenir un contrat d'entretien des systèmes certifiés	X
Normes de rejet des systèmes	X
Systèmes spécifiquement pour des résidences/bâtiments existants	
Toilettes à compost	
Cabinet/toilettes sèches	X
Solutions si ségrégation des eaux (toilettes vs eaux ménagères) (ex : vidange périodique)	X
Déclencheurs/droits acquis pour la mise aux normes de systèmes existants	X
Dispositions encadrant les rejets au fossé/cours d'eau	
Déphosphatation	X
Désinfection	X
Méthodes de prélèvement et d'analyse des rejets des systèmes	
Définit la responsabilité des municipalités pour l'application du Règlement	X
Amendes/infractions	
Dispositions applicables à des territoires particuliers (Basse-Côte-Nord Iles-de-la-Madeleine, etc.)	

Éléments couverts par le territoire visé et qui ne sont pas traités dans le Q-2, r.22

- Possibilité des autorités locales de réglementer
- Raccordement de fosses septiques en série
- Épaisseur maximale de remblai sur la fosse de 4 pieds, et seulement pour les nouvelles constructions. Isolation obligatoire si moins de 2 pieds.
- Possibilité de dérogation par approche performance
- Programme de certification des installateurs et autres
- Gamme de sable filtrant élargie

ANNEXES Minnesota:

Page suivante

Subp. 2. **System influent.**

A. Footing or roof drainage and chemically treated hot tub and pool water must not be discharged into any part of a system. Products containing hazardous chemicals and hazardous waste must not be discharged to a system other than in normal amounts of household products and cleaners designed for household use. Substances not intended for use in household cleaning, including but not limited to solvents, pesticides, flammables, photo finishing chemicals, paint, and dry-cleaning chemicals must not be discharged to the system. Other unused products or substances, or unused medicines, must not be discharged to the system solely as a method of disposal. Floor drains from garages serving dwellings must not be connected to the system.

B. An ISTS must be designed to provide additional treatment if:

(1) raw sewage exceeds 300 mg/l BOD, 200 mg/l TSS, or 50 mg/l oil and grease; or

(2) sewage tank effluent applied to the soil from the sewage tank or other secondary treatment device is greater than the concentrations in part 7080.2150, subpart 3, item K.

Additional treatment must be designed by a Minnesota licensed professional engineer or according to the recommendations in the Prescriptive Designs and Design Guidance for Advanced Designers, which is incorporated by reference in item C, or must use a product registered under chapter 7083.

C. Prescriptive Designs and Design Guidance for Advanced Designers, Minnesota Pollution Control Agency (September 2009 and as subsequently amended), is incorporated by reference, is subject to frequent change, and is available at www.pca.state.mn.us/programs/ists/technical.html.

Statutory Authority: *MS s 115.03; 115.55*

History: *32 SR 1347; 35 SR 1353*

Published Electronically: *October 10, 2013*

7080.1670 REQUIREMENTS TO CONDUCT WORK.

Systems must be designed, installed, inspected, operated, and maintained by appropriately licensed businesses and certified individuals according to part 7083.0700 and any other applicable state requirements.

Statutory Authority: *MS s 115.03; 115.55*

History: *32 SR 1347*

Published Electronically: *October 10, 2013*

7080.1700 DESIGN PHASE I; SITE EVALUATION.

Site evaluations consisting of preliminary and field evaluations according to parts 7080.1710 and 7080.1720 must be conducted for all proposed sites for ISTS. The site evaluation is considered the first phase of an ISTS design.

Statutory Authority: *MS s 115.03; 115.55*

History: *32 SR 1347*

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7080.1710 PRELIMINARY EVALUATION.

A preliminary evaluation of a proposed site for an ISTS consists of determining the following items:

A. design flow, anticipated effluent concentrations of biochemical oxygen demand, total suspended solids, and oil and grease, and anticipated presence of nondomestic waste from the dwelling, dwellings, or other establishments;

B. proposed or existing:

(1) water supply wells within 100 feet of the proposed ISTS;

(2) noncommunity transient public water supply wells within 200 feet of the proposed ISTS if alternative local standards are in effect;

(3) a community or noncommunity nontransient water supply in a drinking water supply management area if alternative local standards are in effect;

(4) existing and proposed buildings or improvements on the lot; and

(5) buried water supply pipes within 50 feet of the proposed system;

C. easements on the lot;

D. the ordinary high water level of public waters, if adjacent to the lot;

E. floodplain designation and flooding elevation from published data or data that is acceptable to and approved by the local unit of government or the Department of Natural Resources, if applicable;

F. property lines;

G. all required setbacks from the system;

H. the soil characteristics at the proposed soil treatment and dispersal areas as obtained from the soil survey report, if available, including the soil map, map units, landscape position, parent material, flooding potential, slope range, periodically saturated soil level, depth to bedrock, texture, color, depth to redoximorphic features, and structure and consistence of soil horizons;

I. a township, range, and section number and other unique property identifiers as required by local government and lot dimensions;

J. names of property owners; and

K. the inner wellhead management zone or wellhead protection area of a public water supply, if applicable.

Statutory Authority: *MS s 115.03; 115.55*

History: *32 SR 1347; 35 SR 1353*

Published Electronically: *October 10, 2013*

7080.1720 FIELD EVALUATION.

Subpart 1. **Scope.** A field evaluation consists of the items described in subparts 2 to 7.

Subp. 2. **Lot lines.** Lot lines shall be established to the satisfaction of the property owner or the property owner's agent. Lot improvements, required setbacks, and easements must be identified.

Subp. 3. **Surface features.** The following surface features must be described:

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A. the percent and direction of the slope at the proposed system location;

B. vegetation types;

C. any evidence of cut or filled areas or disturbed or compacted soil;

D. the flooding or run-on potential; and

E. a geomorphic description.

Subp. 4. **Soil observations.** A minimum of three soil observations are required for the initial and replacement soil treatment area and at least one soil observation must be performed in the portion of the soil treatment area anticipated to have the most limiting conditions. The total number of soil observations required is based on the judgment of the certified individual or the local unit of government. Soil observations must comply with the following requirements:

A. the soil observations must be conducted within or on the borders of the proposed site;

B. the soil observations must be performed in an exposed pit or by hand augering or probing. The use of flight augers is not allowed;

C. the soil observation method must allow observation of the different soil horizons that constitute the soil profile and, if determining the loading rate by part 7080.2150, subpart 3, item E, Table IX, an undisturbed sample must be observed;

D. underground utilities must be located before soil observations are undertaken;

E. required safety precautions must be taken before entering soil pits;

F. soil observations must be conducted prior to any required percolation tests to determine whether the soils are suitable to warrant percolation tests and, if suitable, at what depth percolation tests shall be conducted; and

G. the minimum depth of the soil observations must be to the periodically saturated layer, to the bedrock, or three feet below the proposed depth of the system, whichever is less.

Subp. 5. **Soil descriptions for determination of limiting layer.** Each soil profile observed at the proposed soil treatment area must be evaluated under adequate light conditions with the soil in a moist unfrozen state for the characteristics in items A to H:

A. the depth of each soil horizon measured from the ground surface. Soil horizons are differentiated by changes in texture, color, redoximorphic features, bedrock, structure, consistence, and any other characteristic that affects water movement or treatment of effluent;

B. a description of all soil colors for each horizon according to the Munsell Soil Color Charts, Revised Edition, Munsell Color Corporation (1992), or equivalent. The color charts are incorporated by reference, are available through the Minitex interlibrary loan system, and are not subject to frequent change;

C. a description of the soil texture, structure, and consistence using the United States Department of Agriculture (USDA) soil classification system as specified in the Field Book for Describing and Sampling Soils, which is incorporated by reference under part 7080.1100, subpart 36;

D. depth to the bedrock;

E. depth to the periodically saturated soil for new construction or replacement as determined by redoximorphic features and other indicators, as determined in subitems (1) to (3):

(1) in subsoil and parent material, redoximorphic features include:

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(a) distinct redoximorphic iron accumulations or distinct redoximorphic iron depletions;

(b) a gleyed or depleted soil matrix or redoximorphic mottles having a color chroma of two or less or a depleted matrix or redoximorphic mottles having a color hue of 5Y and a chroma of three or less; or

(c) faint redoximorphic concentrations or faint redoximorphic depletions in subsoil or parent material with a hue of 7.5YR or redder;

(2) in lower topsoil layers that are deeper than 12 inches from the surface and are immediately followed in depth by a periodically saturated horizon, redoximorphic features include:

(a) soil colors with a redoximorphic chroma of two or less; or

(b) redoximorphic accumulations or depletions;

(3) in the upper 12 inches of the topsoil layer, if it is immediately followed by a periodically saturated horizon, the depth of seasonal saturation is determined by one or more of the indicators in units (a) to (f):

(a) soil colors with a chroma of zero;

(b) organic soil textures or mineral soil textures with an organic modifier;

(c) dominance of hydrophytic vegetation;

(d) the soil treatment area at or near the elevation of the ordinary high water level of a surface water or in a concave hill slope position;

(e) redoximorphic accumulation or depletions; or

(f) the soil expressing indicators of seasonal saturation as determined in Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils, USDA Natural Resource Conservation Service (2006 and as subsequently amended). The field indicators are incorporated by reference, are available through the Minitex interlibrary loan system, and are subject to frequent change;

F. depth to the periodically saturated soil for all existing systems, determined by redoximorphic features in item E, except subitems (2), unit (a), and (3), units (a), (c), and (d), as measured outside the area of system influence in an area of similar soil;

G. depth of standing water in the soil observation excavation, measured from the soil surface, if observed; and

H. any other soil characteristic that needs to be described to design a system, such as hardpans or restrictive layers. These other characteristics must be classified according to the Field Book for Describing and Sampling Soils, which is incorporated by reference under part 7080.1100, subpart 36.

Subp. 6. **Determination of loading rate and absorption area size.** The effluent loading and absorption area size must be determined by item A or B, or both, as required by the local unit of government:

A. the loading rate based on an examination of soil texture, undisturbed soil structure, and soil consistence at the depth of either the proposed soil absorption area or the most restrictive layer within three feet of the proposed soil absorption area, using the United States Department of Agriculture (USDA) soil classification system as specified in the Field Book for Describing and Sampling Soils, which is incorporated by reference under part 7080.1100, subpart 36; or

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B. the loading rate based on the percolation procedure described in subitems (1) to (8) or other equivalent procedure as approved by the local unit of government:

(1) each test hole must be six to eight inches in diameter and have vertical sides. For mounds and at-grade systems, the bottom of each test hole must be in the upper 12 inches of the original soil. For trenches and seepage beds, the bottom of each test hole must be at the depth of either the proposed absorption area or the most restrictive layer within three feet of the proposed soil absorption layer;

(2) soil texture descriptions for percolation test holes must note the depths from the ground surface where texture changes occur;

(3) the bottom and sides of the hole must be carefully scratched to remove any smearing and to provide a natural soil surface into which water penetrates. The scarification must not result in the hole having a diameter of greater than eight inches;

(4) all loose material must be removed from the bottom of the test hole and two inches of one-fourth to three-fourths inch gravel or clean sand must be added to protect the bottom from scouring;

(5) the hole must be carefully filled with clear water to a minimum depth of 12 inches from the bottom of the test hole and maintained for no less than four hours for saturation to occur. The soil must then be allowed to swell for at least 16, but no more than 30, hours. In sandy soils, the saturation and swelling procedure is not required and the test is allowed to proceed if the initial filling of the hole with 12 inches of water seeps away in less than ten minutes;

(6) in sandy soils, water depth must be adjusted to eight inches over the soil at the bottom of the test hole. From a fixed reference point, the drop in water level must be measured in inches to the nearest 1/16 inch at approximately ten-minute intervals. A measurement is also allowed to be made by determining the time it takes for the water level to drop one inch from an eight-inch reference point. If eight inches of water seeps away in less than ten minutes, a shorter interval between measurements must be used, but water depth must not exceed eight inches. The test must continue until three consecutive percolation rate measurements do not vary by more than ten percent. In other soils, the water depth must be adjusted to eight inches over the soil at the bottom of the test hole. From a fixed reference point, the drop in water level must be measured in inches to the nearest 1/16 inch at approximately 30-minute intervals and refilled between measurements to maintain an eight-inch starting head. If water seeps away in less than 30 minutes, a shorter time interval between measurements must be used, but water depth must not exceed eight inches. The test must continue until three consecutive percolation rate measurements do not vary by more than ten percent. The percolation rate is also allowed to be determined by observing the time it takes the water level to drop one inch from an eight-inch reference point if a constant water depth of at least eight inches has been maintained for at least four hours prior to the measurement;

(7) the time interval must be divided in minutes by the drop in water level in inches to obtain the percolation rate in minutes per inch. The percolation rates that are within the ten percent provision determined for each test hole must be averaged to determine the final percolation rate for that hole. The slowest final percolation rate for all holes within the soil dispersal area must be used for design; and

(8) a percolation test must not be run where frost exists within 12 inches of the bottom of the percolation test hole.

Subp. 7. **Site protection.** The proposed soil treatment and dispersal area site shall be protected from disturbance, compaction, or other damage by staking, fencing, posting, or other effective method.

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Statutory Authority: *MS s 115.03; 115.55*

History: *32 SR 1347; 35 SR 1353*

Published Electronically: *October 10, 2013*

7080.1730 PHASE I; SITE EVALUATION REPORTING.

A written report on the site evaluation must be prepared and include the following:

A. preliminary and field evaluation results from parts 7080.1710 and 7080.1720;

B. dates of preliminary and field evaluations;

C. a map drawn to scale or dimension with a north arrow, and including:

(1) horizontal and vertical reference points of the proposed soil treatment and dispersal areas, soil observations, percolation tests, and pertinent distance from the proposed ISTS to all required setbacks, lot improvements, easements, ordinary high water mark of public waters, property lines, and direction and percent slope;

(2) the location of any unsuitable, disturbed, or compacted areas; and

(3) the access route for system maintenance;

D. the estimated depth of periodically saturated soil layer, bedrock, or flood elevation, if appropriate;

E. the proposed elevation of the bottom of the soil treatment and dispersal system;

F. anticipated construction-related issues;

G. the name, address, telephone number, and certified statement of the individual conducting the site evaluation;

H. an assessment of how known or reasonably foreseeable land use changes are expected to affect system performance, including, but not limited to, changes in drainage patterns, increased impervious surfaces, and proximity of new water supply wells;

I. a narrative explaining any difficulties encountered during the site evaluation, including but not limited to identifying and interpreting soil and landform features and how the difficulties were resolved; and

J. a notation of any differences between observed soil characteristics and those identified in the soil survey report.

Statutory Authority: *MS s 115.03; 115.55*

History: *32 SR 1347*

Published Electronically: *October 10, 2013*

7080.1750 DESIGN PHASE II.

Subpart 1. **System design.** Completion of tasks outlined in parts 7080.1850 to 7080.2430 is considered the second phase of ISTS design.

Subp. 2. **Compliance.** Designs for new construction or replacement ISTS must comply with applicable requirements and any other applicable codes, rules, and laws.

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SOURCES Minnesota:

1. *State of Minnesota, Minnesota Plumbing Board, Chapter 4714 : Plumbing code, 2016*
2. *State of Minnesota, Department of Health, Chapter 4725: Wells and boring, 2016*
3. *State of Minnesota, Department of Natural Resources, Chapter 6105: Wild, scenic, and recreational rivers, 2017*
4. *State of Minnesota, Department of Natural Resources, Chapter 6120: Shoreland and floodplain management, 2015*
5. *State of Minnesota, Minnesota Pollution Control Agency, Chapter 7080: Individual Subsurface Sewage Treatment Systems, 2016*
6. *State of Minnesota, Minnesota Pollution Control Agency, Chapter 7082: Administrative Requirements of Local SSTS Programs, 2016*
7. *State of Minnesota, Minnesota Pollution Control Agency, Chapter 7083: Certification/Licensing, Product Registration, Advisory Committee, 2018*
8. *Site internet, Minnesota Pollution Control Agency, https://www.pca.state.mn.us/water/ssts-rules-and-regulations*
9. *Minnesota Pollution Control Agency,* Subsurface sewage treatment systems well setbacks, june 2019
10. *Minnesota Pollution Control Agency,* SSTS structure setbacks and other requirements, june 2019

7.0 NEW YORK

7.1 ENCADREMENT :

C'est le département de la santé « State of New-York Department of Health » qui est responsable de la mise en place du cadre règlementaire relatif à l'évacuation et au traitement des eaux usées dans l'état de New-York.

Le cadre réglementaire relatif aux installations septiques est déterminé par le « New York Codes, Rules and Regulations, Title 10, Chapter 2, Part 75. Standard for individual onsite water supply and wastewater treatment systems, Appendix 75-A », ci-après le règlement. La dernière mise à jour de la norme date de mars 2016.

Ce code est adopté en vertu de la Public Health Law mise à jour en avril 2008 et la Environmental Conservation Law – Article 17 – Water Pollution Control mise a jour en avril 2016.

Un Code de construction plus spécifique connu comme le « Green Book » ou le « Residential onsite wastewater treatment system – Design Handbook », ci-après le guide, donne plus de détails sur les aspects techniques des gammes conventionnelles des systèmes de traitement. La dernière version du document date de 2012.

Les municipalités « county/district » sont responsables de l'application des normes. En l'absence d'autorité locale compétente dans certain « county/district », les bureaux régionaux du département de la santé « New York State Department of Health » assurent l'application des normes.

Selon l'article 75-A.1 du règlement, le cadre réglementaire s'applique aux eaux usées de nature domestique d'un débit journalier de moins de 1000 gallons/jour.

> ***75-A.1 Introduction.***
>
> ***(a) This appendix applies to on-site wastewater treatment systems serving residential properties and receiving sewage without the admixture of industrial wastes or other wastes, as defined in Environmental Conservation Law, Section 17-0701, in quantities of less than 1,000 gallons per day (gpd).***

Tout autre type d'eaux usées générées ou de débit journalier plus élevés sortent du cadre réglementaire comparable au Q-2, r.22. À cet effet, le « New York State design standard for intermediate sized wastewater treatment systems », à jour en date de marche 2014, agit à titre de standard de conception pour le Department of Environmental Conservation qui analyse les projets qualifiés d'intermédiaires.

Les systèmes septiques devant traiter des charges différentes ou des débits supérieurs, doivent faire l'objet d'autorisations spécifiques du « New York State Department of Health » en vertu de la « Environmental Conservation Law, Section 17-0701 » et selon les standards de la « New York's State Pollution Discharge Elimination System regulation ». La juridiction du « New York State Department of Health » en matière de révision des demandes peut être partagée/déléguée au « Department of Environnemental Conservation » pour les débits de 1000 à 10 000 gallons/jour. Elle est toutefois réservée au « Department of Health » pour les débits journaliers excédent 10 000 gallons/jour.[11]

> • ***Systems designed and permitted for discharge up to 1,000 gallons per day (GPD) of treated water are regulated solely by Appendix 75A in the NY State sanitary code;***
>
> • ***Systems for discharges between 1,000-10,000 GPD are regulated according to the state's SPDES regulations, but for systems in this range, the NYS DOH has the responsibility for administering the review of proposed system designs and for approving permits for them, and as noted above, this is generally done by a county DOH office or a regional office of NYS DOH. This transfer of authority and responsibility for design review and permitting of systems was implemented through a memorandum of understanding between NYS DEC and NYS DOH in 1984. But if DOH wishes to have the DEC directly involved in review of a specific OWTS proposal and design, DEC will get involved and in some cases, DOH will give most or all of the review responsibility for a specific system to DEC. (A presentation developed by the NY State Dept. of State's local government training program references this 1984 MOU and provides a lot of other relevant perspective – it's available at https://www.cwicny.org/misc/onsite.pdf***
>
> • ***Systems for discharges over 10,000 GPD are regulated by SPDES and NYS DEC retains the primary role for administering review of system designs and for permit approvals.***

Le règlement (article 75-A.11) prévoit aussi que les « county/district » ont la compétence pour adopter des normes plus sévères que la cadre général et d'approuver des dérogations au cas par cas pour l'utilisation de systèmes non conventionnels :

> ***75-A.11 Specific Waivers.***
>
> ***Deviations from these standards may be granted by the State Commissioner of Health or the designated full-time city, county or part-county health department***

[11] https://hudsonvalleyregionalcouncil.org/wp-content/uploads/2019/08/D-Onsite-wastewater-systems-Final-1-29-2018.pdf

official by issuance of a Specific Waiver in accordance with 10NYCRR Part 75, Section 75.6(b) of this Title.

7.2 TYPE D'EAU : Types d'eau visés par l'encadrement

Tel que mentionné précédemment, le cadre réglementaire vise à encadrer les rejets d'eaux usées des résidences générant un débit journaliser de moins de 1000 gallons/jour (3 785 L/jour). Le règlement définit le type d'eaux usées visées (articles 75-A.1 et 75-A.3).

> ***75-A.1 Introduction.***
>
> ***[…](29) Sewage - the combination of human and household waste with water which is discharged to the home plumbing system including the waste from a flush toilet, bath, sink, lavatory, dishwashing or laundry machine, or the water-carried waste from any other fixture, equipment or machine.[…]***
>
> ***[…](33) Wastewater - any water discharged from a house through a plumbing fixture to include, but not limited to, sewage and any water or waste from a device (e.g., water softener brine) which is produced in the house or property.[…]***

> ***75-A.3 Sewage Flows.***
>
> ***(a) Roof, footing, garage, cellar and surface water drainage must be excluded from the system. Water softener, water recharge and backwash wastes normally are not to be discharged to the system unless a separate subsurface discharge to an area 250 feet from wells or water courses is unavailable.***

Le règlement ne prévoit pas d'adaptation pour la gestion des eaux d'autres bâtiments. Dans ce cas, c'est la procédure du « New York's State Pollution Discharge Elimination System regulations » qui s'applique.

Les projets visant des débits journaliers de 1000 à 10 000 gal/jour sont encadrés par le « New York State design standard for intermediate sized wastewater treatment systems » dans la mesure où les eaux ne sont pas incorporées à des eaux de procédé industriel.

> ***NEW YORK STATE DESIGN STANDARDS FOR INTERMEDIATE SIZED WASTEWATER TREATMENT SYSTEMS***
>
> ***A.3 Obtaining a SPDES Permit for a Wastewater Discharge [...]***
>
> ***The SPDES PCI General Permit authorizes discharges to groundwater between 1,000 and 10,000 gallons per day (gpd) of treated sanitary wastes only, without the admixture of industrial waste from onsite wastewater treatment systems (OWTS) serving private multi- family dwellings, or other private, commercial, or institutional facilities.***

Dans le cas d'un établissant susceptible de générer des eaux de procédé industriel, une ségrégation de ces eaux est prévue.

> ***NEW YORK STATE DESIGN STANDARDS FOR INTERMEDIATE SIZED WASTEWATER TREATMENT SYSTEMS***
>
> ***B.6.a Wastewater Characterization***
>
> ***Some facilities within the scope of this document may generate industrial wastes due to the nature of their activities. For example, schools may generate industrial waste from sinks or drains installed in science labs, auto repair, art, hair care or other vocational training. These wastes should be separated from the on-site wastewater treatment system. The separated wastes can then either be transported to a facility approved to treat the waste, or directed to an individual SPDES-permitted industrial wastewater treatment system. The design of an industrial waste treatment facility is outside the scope of this document.***

7.3 DENSITÉ MAXIMALE : Densité maximale des installations septiques

Le règlement aborde la question de la densité à l'article 75-A.2 en relation avec la protection des sources d'approvisionnement en eau potable. Les dimensions des terrains par le biais de normes de lotissement peuvent être adoptées par les autorités locales.

> ***75-A.2 Regulation by Other Agencies.***
>
> ***(d) When individual sewage systems overlay a drinking water aquifer, local health departments may establish population density limits and minimum lot sizes for residential development with on-site sewage treatment systems.***

> ***75-A.1 Introduction.***
>
> ***(…)***
>
> ***(b) Definitions - As used in this Appendix, the following words and terms shall have the indicated meaning:***
>
> ***(24) Local Health Department - a city, county, or part-county department of health or a State Department of Health District Office.***

Le règlement pour les projets intermédiaires fixe quant à lui une certaine forme d'objectifs en matière de densité d'occupation. Ceux-ci sont toutefois formulés avant tout à titre de recommandation.

> ***NEW YORK STATE DESIGN STANDARDS FOR INTERMEDIATE SIZED WASTEWATER TREATMENT SYSTEMS***
>
> ***E.3 Nitrate Advisory for Groundwater Discharge***
>
> ***The application rates given in Table E-1 may not be sufficient to protect groundwater in soils with percolation rates faster than 10 mpi overlying Long Island aquifers, or New York State designated Primary Water Supply aquifers, and Principal aquifers. In these areas, extra protection may be required to prevent degradation of groundwater quality. When design population density exceeds 2 to 4 dwelling units/acre (6 to 11 persons/acre), recharge water to the aquifer from conventional subsurface disposal systems probably will exceed the nitrate standard for drinking water. Although NYSDEC does not make zoning regulations, it is recommended that population densities be kept below this level unless local factors indicate that the project will not result in groundwater degradation alone, or in combination with other discharges (including fertilizers and pesticides leached from the ground surface). If population density exceeds 11 persons per acre, absorption system design should be modified to provide enhanced treatment of the wastewater by the soil system, or additional treatment should***

> ***be provided prior to subsurface discharge. Average population density is based upon the total land area of the development. For example, in addition to land that dormitories are on, playing fields would be included when determining the average population density for a boarding school.***

Il n'y a pas de norme relative à l'impact cumulatif des rejets d'eau usée. Cet aspect n'est pas pris en compte dans le règlement de l'État de New-York.

7.4 REJETS : Rejets en surface

Cet élément n'est pas traité pour ce territoire en vertu du document d'appel d'offres.

7.5 CONTAMINANTS : Contaminants encadrés

Le règlement ne traite pas spécifiquement de l'encadrement des différents contaminants typiques que l'on retrouve dans les eaux usées résidentielles, par exemple : MES, DBO5, phosphore, azote.

De plus, le guide fait seulement référence (article 7.1) aux normes de certification NSF 40 et NSF 245 qui, elles, contiennent des objectifs de qualité des eaux usées.

> ***Enhanced Treatment Units (ETUs)***
>
> ***7.1 General Information***
>
> ***(…)***
>
> ***ETUs are listed as Class I Standard 40 or Standard 245 units with NSF International (NSF). Class 1 Standard 40 units must meet effluent limits of 25 mg/l BOD and 25 mg/l TSS to be listed by NSF. Standard 245 units are also tested to meet Standard 40 criteria; these units are further certified to reduce nitrogen discharges. Nitrogen discharges must be decreased by at least 50% to be listed by NSF.***

Par conséquent, il n'y a pas, de norme de rejet ni d'exigence de suivi de la qualité de l'eau usée traitée.

Le règlement pour les projets intermédiaires est quant à lui plus spécifique et établit notamment, pour des autres rejets, des seuils de DBO5, MES, pH, coliformes fécaux, chlore résiduel, ammoniac, phosphore, etc. L'échantillonnage de ces paramètres n'est toutefois pas obligatoire pour les projets de moins de 30 000 gal/jour autrement que pendant la phase d'approbation d'une technologie expérimentale ou si celui-ci a été rendu obligatoire par les conditions d'émission du permis d'exploitation délivré.

Table B-4A Typical Effluent Limits for Non-Intermittent Streams

Parameter	Type	Limitation	Units
BOD_5 [28]	30 -Day Arithmetic Mean	30	mg/L
BOD_5	7-Day Arithmetic Mean	45	mg/L
TSS [29]	30-Day Arithmetic Mean	30	mg/L
TSS	7-Day Arithmetic Mean	45	mg/L
Settleable Solids	Daily Maximum	0.3/0.1[29]	ml/L
pH	Range	6.0 – 9.0	SU
Fecal Coliform [30]	30-Day Geometric Mean	200	No. of colonies per 100 ml
Fecal Coliform [30]	7-Consecutive Day Geometric Mean	400	No. of colonies per100 ml
Total Residual Chlorine	Daily Maximum	[30, 31]	mg/L
Ammonia	30-Day Arithmetic Mean	[31]	mg/L as NH_3
Total Phosphorus	Site specific	[31]	mg/L as P

Table B-4B Typical Effluent Limits for Intermittent Streams[32]

Parameter	Type	Limitation	Units
BOD_5	Daily Maximum	5	mg/L
TSS	Daily Maximum	10	mg/L
Settleable Solids	Daily Maximum	0.1	ml/L
Total Residual Chlorine	Daily Maximum	0.02	mg/L
Ammonia[33]	Daily Maximum or Average	2.2 in winter 1.5 in summer	mg/L as NH_3
Dissolved Oxygen	Daily Minimum	≥ 7.0	mg/L
pH	Range	6.0 – 9.0	SU
Total Phosphorus	Site-specific	Site-specific	mg/L as P
Coliform, fecal, when disinfecting	30-day geometric mean	200	Number of colonies per 100 ml
Coliform, fecal, when disinfecting	7 consecutive-day geometric mean	400	Number of colonies per 100 ml

7.6 CERTIFICATION : Entité responsable d'effectuer la certification des différents intervenants et des technologies

Le règlement de base et le règlement sur les projets intermédiaires n'encadrent pas la certification des entrepreneurs/installateurs. Certaines composantes des installations septiques doivent toutefois être certifiées. Les fosses septiques en acier doivent être conformes à la norme Standard UL-70 en vertu du règlement de base (article 75-A.6).

> ***(5) Steel tanks must have a label indicating corrosion protection complying with Underwriters Laboratories, Inc., Standard UL-70 or equivalent.***

Le règlement sur les projets intermédiaires introduit quant à lui une référence à la norme ASTM et à la certification de la Precast Concrete Association of New York inc. (PCANY) comme association compétente pour la certification de différents produits de béton préfabriqués.

> ***D.6 Septic Tanks***
>
> ***Construction and Materials for Septic Tanks***
>
> ***Precast concrete septic tanks should conform to ASTM C1227, and be certified (i.e., a tank that has been certified under the PCANY Certification Program is a certified tank). The joints for horizontal seam and vertical seam concrete tanks should conform to the ASTM "Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants C990 (latest edition)". Precast concrete septic tanks may be coated with a bituminous coating inside and out to ensure watertightness and prevent deterioration when deemed necessary by the design engineer or the manufacturer due to specific site conditions. Concrete septic tanks may also be constructed to ASTM Specification C150 Type II for moderately sulfate resisting cement, or by the addition of appropriate additives.***

De plus, la certification des technologies de traitement est sous l'égide de la NSF International (National Sanitation Foundation). L'organisme est responsable du banc d'essai et de l'approbation des technologies en fonctions de différents standards de performance. Le règlement fait référence aux normes NSF40 et NSF46 (article 75-A.6).

> ***(6) Enhanced Treatment Units (ETU)***
>
> ***(i) General. ETUs shall have a label indicating compliance with the standards for a Class I unit as described in the National Sanitation Foundation (NSF) International Standard 40 or equivalent testing.***
>
> ***(...)***
>
> ***(b) ETUs shall have an effluent filtering mechanism as part of the manufactured product or an effluent filter with a label indicating compliance with NSF Standard***

> ***46 or equivalent installed on the system outlet prior to discharge to the absorption area.***
>
> ***(…)***

Les toilettes à compost doivent aussi être certifiées NSF41 en vertu de l'article 74-A.10.

> ***(2) Composters. These units shall be installed in accordance with the manufacturers instructions. The units shall have a label indicating compliance with the requirements of National Sanitation Foundation (NSF) Standard 41 or equivalent. Only units with a warranty of five years or more shall be installed.***

Le règlement sur les projets intermédiaires est quant à lui plus général sur l'aspect de la certification. Il « recommande » notamment l'utilisation de produits certifiés NSF international mais laisse visiblement place à l'utilisation d'autres technologies si leur performance est jugée équivalente.

> ***F. Secondary Treatment***
>
> ***F.1 Introduction***
>
> ***[…] For systems discharging to an STS with a design flow range of 400 to 1,500 gpd, NYSDEC strongly recommends the use of filters/screens and enhanced treatment units certified by NSF International Inc.'s Standards 46 and 40, respectively, or by an equivalent certification system. For systems discharging greater than 1,500 gpd to an STS, multiple NSF-certified systems or another treatment technology chosen from these Design Standards, Ten States Standards or TR-16 may be used.***

D'autre part, le guide précise les actes réservés à des professionnels qualifiés en vertu de la « New York State Education Law ». La règle générale veut que la conception des installations septiques soit réalisée par des professionnels qualifiés[12]. L'exigence provient conséquemment avant tout de la notion d'actes d'ingénierie réservés et non par une imposition du règlement d'une catégorie de professionnel en particulier. Le département de la santé ou de l'environnement ne gèrent conséquemment pas l'aspect de la certification des professionnels qui sont réputés devoir agir en fonction de leurs obligations déontologiques suivant une formation académique appropriée et

[12] New York State Department Of Health, Residential Onsite Wastewater Treatment Systems, FACT SHEET #1, Need for Licensed Design Professionals - Residential Onsite Wastewater Treatment Systems, January 2014.

l'obtention de leur diplôme d'étude leur permettant d'exercer dans un domaine à actes réservés pertinents.

Tout encadrement plus large notamment relatif aux systèmes de traitement avancés et leur entretien est laissé à la discrétion des autorités locales.

Le règlement sur les projets intermédiaires est toutefois plus spécifique dans la cadre du suivi des installations. Dans certaines situations, il requiert ainsi un suivi de la part d'un opérateur certifié. Il s'agit toutefois de situations qui visiblement s'adressent avant tout à des projets collectifs sortant du cadre de la présente recherche.

> ***J.2 Systems Requiring a Certified Operator***
>
> ***State regulations require that certain sewage treatment plants must be under supervision of an approved operator at all times. According to 6 NYCRR Part 650.1 (c), only the following systems found in these Design Standards are not subject to this requirement:***
>
> ***(1) Septic tanks followed by subsurface leaching facilities with eventual discharge to groundwater, regardless of the design capacity***
>
> ***(2) Septic tanks followed by open or covered intermittent sand filters, with a designated capacity of less than 50,000 gallons per day***

Selon le guide, les entreprises qui effectuent la vidange des fosses septiques et autres réservoirs, doivent être accrédités (guide, article 12.1.1, page 95).

> ***A NYSDEC licensed septage waste transporter (septic tank pumper) can measure tank layers with a "sludge judge" or similar device and pump out the tank if necessary. Pump out clearances noted above also apply to any chamber in multi-compartment tanks and to any tanks in series.***
>
> ***If the septic tank is not emptied periodically, excess solids can pass into the absorption facility, rapid clogging occurs, premature failure follows and finally, the absorption facility must be repaired or replaced. Periodically pumping a septic tank is far less expensive than replacing an absorption facility. Septic tanks should be inspected annually to determine structural integrity and ensure that the inlet and outlet baffles or tees are in place. All baffles, inlet and outlet piping should be inspected using a strong light. Repairs should be made if necessary.***

7.7 CAPACITÉ: Capacité des fosses septiques

La règlementation encadre la capacité des fosses septiques en fonction du nombre de chambres à coucher (article 75-A.6).

> ***75-A.6 Septic Tanks.***
>
> ***(a) General information.***
>
> ***(1) Septic tank capacities shall be based upon the number of household bedrooms. An expansion attic shall be considered as an additional bedroom. Table 3 specifies minimum septic tank capacities and minimum liquid surface areas.***

TABLE 3
MINIMUM SEPTIC TANK CAPACITIES

Number of Bedrooms	Minimum Tank Capacity (gallons)	Minimum Liquid Surface Area (sq. ft.)
1, 2, 3	1,000	27
4	1,250	34
5	1,500	40
6	1,750	47

NOTE:Tank size requirements for more than six bedrooms shall be calculated by adding 250 gallons and seven square feet of surface area for each additional bedroom. A garbage grinder shall be considered equivalent to an additional bedroom for determining tank size.

Ni le règlement, ni le guide ne précisent s'il s'agit d'une capacité totale ou effective. Cependant, il semble très probable, si l'on compare avec les états voisins, qu'il s'agit de la capacité effective. On retrouve également une ouverture à l'installation de fosses en série (article 75-A.6).

> ***75-A.6 Septic Tanks.***
>
> ***(b) Design and Installation.***
>
> ***(2) Multi-compartment tanks or tanks in series.***
>
> ***(v) Tanks in series should be connected by a single pipe with a minimum diameter of four inches.***
>
> ***(vi) The volume and surface area for meeting the requirements of Table 3 shall be based upon the total volume and surface areas of all the tanks and chambers.***

Le règlement sur les projets intermédiaire prévoit quant à lui une capacité effective pour les fosses recevant des débits journaliers de moins de 5000 gal/jour de 1,5 fois le débit quotidien.

Table D-2 Septic Tank Sizing (effective volume) for Multi-Home Dwellings[40], Private, Commercial, and Institutional Applications

Daily Flow, Q (gpd)	Minimum Effective Tank Capacity (gal)
Under 5,000	1.5Q
5,000 to 15,000	3,750 + 0.75 Q
Greater than 15,000	Q

7.8 VIDANGE : Encadrement de la vidange des fosses septiques

Le règlement n'aborde pas la question de la vidange des fosses septiques. C'est dans le guide que cet aspect est traité en décrivant la méthode de mesure de l'écume et des boues à utiliser annuellement pour déterminer la nécessité de vidanger (guide, article 6.11.1, page 40).

> ***6.11.1 Septic Tank Inspections and Cleaning***
>
> ***Septic tanks should be inspected annually to determine scum and sludge accumulation. Most tanks should be pumped out every two (2) to three (3) years. Septic tanks need to be pumped out whenever the bottom of the scum layer is within three (3) inches of the bottom of the outlet baffle or sanitary tee, the top of the scum layer is close to the top of the outlet baffle or sanitary tee, or the top of the sludge accumulation is within ten (10) inches of the bottom of the outlet baffle or sanitary tee. A NYSDEC permitted septage waste transporter (septic tank pumper) should be employed to perform inspections to determine if pumping is necessary utilizing equipment such as a "sludge judge". The pump-out clearances also apply to any chamber in multi-compartment tanks and to any tanks in-series; all tanks or chambers should be pumped out as soon as any one tank or chamber fails the minimum clearance.***

Il n'y a pas de distinction entre l'utilisation annuelle ou saisonnière. Tel que décrit à l'article 6.11.1 ci-haut, la vidange des fosses septiques se fait sur une base volontaire ou recommandée. Aucune fréquence de vidange à intervalle fixe n'est déterminée. Le moment de la vidange est déterminé en fonction du mesurage de l'écume et des boues et le règlement ne fait état d'aucune nécessité de faire suivre une preuve de vidange aux autorités.

Le règlement pour les projets intermédiaires prévoit également la méthode annuelle de mesurage de l'écume et des boues pour établir la nécessiter de vidanger. Aucune preuve de vidange n'est toutefois systématiquement requise mais le propriétaire doit être en mesure de la fournir sur demande.

> ***J.6 Residuals Hauling and Disposal (6 NYCRR Parts 364 and 360)***
>
> ***For systems operating under a SPDES permit, 6 NYCRR Part 750-2.8(d) requires septic tanks be inspected annually and septage (solids and scum) pumped out when the combined sludge and scum layers equal 25 percent of the tank volume. For STEP or STEG systems, residential septic tanks should be pumped out every two to five years. If inspected annually, the pump-out schedule may be adjusted so long as the combined sludge and scum layers combined do not exceed 25 percent of the tank volume. The bottom of the scum layer should always be three inches or more above the bottom of the outlet device.***

7.9 SUIVI : Nécessité de faire le suivi des installations septiques

Selon l'article 75-A.6 du règlement, l'approbation de l'utilisation de technologies alternatives « Enhanced treatment units » est laissée à la discrétion des autorités locales. Le règlement ne prévoit donc pas de processus de certification des produits. On en comprend toutefois qu'en l'absence de ligne directrice à cet effet, les autorités locales doivent s'en remettre à tout comparables ou standards internationaux qu'ils jugent adéquat pour approuver l'utilisation de technologies. Qu'un produit soit ainsi approuvé pour utilisation seulement à la pièce ou sur l'ensemble de leur territoire n'est donc pas défini non plus et tiens visiblement du jugement et de la procédure interne à chaque entité locale. L'encadrement du suivi des installations leur est également délégué (guide, article 7.4, page 45).

> ***75-A.6 Septic Tanks.***
>
> ***(...)***
>
> ***(1) ETUs are subject to the jurisdiction of a Responsible Management Entity (RME), or***
>
> ***(2) Local sanitary codes or watershed rules or regulations incorporate the requirement to maintain and service the ETU in accordance with the manufacturer's recommendations.***
>
> ***(...)***

> ***7.4 Operation and Maintenance of ETUs (Enhanced treatment units)***
>
> ***Numerous ETUs and technologies are currently available to meet wastewater treatment needs. Without proper maintenance, however, these treatment systems and technologies will fail to perform as designed and efforts to protect public health and the environment will be compromised. This concept is true for all onsite systems; however, the use of ETUs and more complex soil distribution systems are typically used on difficult sites (for example small sites and/or poor soil conditions) or sensitive sites (such as lake side properties and/or compromised separation distances), making effective site evaluation, installation and continual maintenance of an ETU vital.***
>
> ***LHDs, Watershed Protection Agencies (WPA), or local communities considering the general use of ETUs to manage and solve OWTS issues consider the following concepts in developing a system approval and management program or local code development:***
>
> ***• Define program goals and requirements in codes***
>
> ***• Educate engineers, contractors and public on ETUs and codes***
>
> ***• Oversee site evaluation, design, construction and maintenance***

> • ***Provide system tracking, maintenance verification and record keeping***
>
> • ***Confirm availability of service providers for products to be used***
>
> • ***Establish adequate legal authority, enforcement mechanisms and compliance incentives***
>
> ***Many resources are available to assist parties interested in incorporating ETUs and/or management of OWTSs within their jurisdiction. The NYSDOH and LHDs will neither approve nor disapprove RMEs. Interested parties must consider what type of oversight, tracking and enforcement will work best for their needs. Valuable information and guidance is available through the USEPA, the Water Environment Research Foundation (WERF), the National Environmental Services Center (NESC), other States and other national organizations dedicated to onsite wastewater treatment system design and management.***

Le règlement et le guide ne traitent pas de l'obligation de suivi tel qu'un relevé sanitaire ou un échantillonnage des installations septiques. Cependant, nous comprenons, de l'article 7.4 du guide, que les autorités locales ont le pouvoir d'adopter tout mécanisme de suivi ou de contrôle.

Le règlement sur les projets intermédiaires ne prévoit pas de modalités d'entretiens par règlement. Celles-ci sont laissées à la discrétion du processus d'analyse en fonction du type de système projeté, de sa complexité et de l'usure attendue de ses composantes.

7.10 RESTRICTIONS : Restrictions quant à la localisation des installations septiques

Le règlement fixe les normes de localisation des systèmes étanches et non étanches au tableau 2 de l'article 75-A.4. À noter que les mesures sont en pieds (système impérial).

TABLE 2
SEPARATION DISTANCES FROM WASTEWATER SYSTEM COMPONENTS
(IN FEET)

System Components	Well or Suction Line (e)(g)	To Stream, Lake, watercourse (b), or Wetland	Dwelling	Property Line
House sewer (watertight joints)	25 if cast iron sewer pipe, 50 otherwise	25	3	10
Septic tank or watertight ETU	50	50	10	10
Effluent line to distribution box	50	50	10	10
Distribution box	100	100	20	10
Absorption field (c)(d)	100 (a)	100	20	10
Seepage pit(d)	150 (a)	100	20	10
Raised or Mound system (c)(d)	100 (a)	100	20	10
Intermittent Sand Filter (d)	100 (a)(f)	100 (f)	20	10
Non-Waterborne Systems with offsite residual disposal	50	50	20	10
Non-Waterborne Systems with onsite discharge	100	50	20	10

NOTES:

(a) When wastewater treatment systems are located upgrade and in the direct path of surface water drainage to a well, the closest part of the treatment system shall be at least 200 feet away from the well.

(b) Mean high water mark.

(c) For all systems involving the placement of fill material, separation distances are measured from the toe of the slope of the fill.

(d) Separation distances shall also be measured from the edge of the designated additional usable area as described in Section 75-A.4 (a)(5).

(e) The closest part of the wastewater treatment system shall be located at least 10 feet from any water service line (e.g. public water supply main, public water service line or residential well water service line).

(f) When sand filters are designed to be watertight and collect all effluent, the separation distance can be reduced to 50 feet.

(g) The listed water well separation distances from contaminant sources shall be increased by 50% whenever aquifer water enters the water well at less than 50-feet below grade. If a 50% increase cannot be achieved, then the greatest possible increase in separation distance shall be provided with such additional measures as needed to prevent contamination.

Le règlement sur les projets intermédiaires établit également des paramètres sommes-toutes comparables au tableau B-2.

Table B-2 Minimum Horizontal Separation Distance (in feet)

Existing Feature	Watertight Septic Tank	Sewer Line	Absorption Field or Unlined Sand Filter (Including Replacement Area)	Absorption Field Located in Gravel Soils (Including Replacement Area)	Seepage Pits (Including Replacement Area)
Required Minimum Horizontal Separation Distances per Public Health Law					
Drilled Well – Public water system[4]	100	50	200	200	200
Drilled Well – Private water system[5]	50	50	100	200	150
Water Line (Pressure)[6]	10	10	10	10	10
Recommended Minimum Horizontal Separation Distances					
Water Line (Suction)	50	50	100	100	150
Dug Well / Spring [7]	75	50	150	200	150
Surface Water [8]	50	25	100	100	100
Reservoir (water supply) – Private [9]	50	50	100	100	100
Reservoir (water supply) – Public [9]	100	100	200	200	200
Interceptor Drain/Open Drainage Diversion to Groundwater	25	25	50[10]	50[10]	50[10]
Stormwater Infiltration Management Practice	25	25	50[10]	50[10]	50[10]
Stormwater Management Practice Discharging to Surface Water[10]	50	25	100	100	100
Culvert (Tight Pipe)	25	10	35	35	35
Culvert Opening	25	25	50	50	50
Catch Basin	25	N/A	50	50	50
Swimming Pool In Ground	20	10	35	35	50
Foundation	10	N/A	20	20	20
Property Line	10	10	10	10	10
Top of Embankment	25	25	50	50	50
Wetland (NYSDEC)[11]	100	100	100	100	100

7.11 MILIEUX SENSIBLES :

Tel que détaillé au point précédent, le règlement de l'état de New-York prévoit certaines marges de recul ou distances de séparation entre certains éléments sensibles et les composantes d'une installation septique. En vertu de l'article 75-A.4 des distances doivent être respectées, entre autres, à partir des lacs, cours d'eau et milieux humides. Aucune restriction n'est toutefois imposée relativement à la préservation d'arbres ou de milieux boisés.

Le règlement traite aussi, aux articles 75-A.2 et 75-A.4, de normes de protection supplémentaires en lien avec un aquifère d'approvisionnement en eau potable. Dans ce domaine la responsabilité de réglementer est déléguée aux autorités locales.

> ***75-A.2***
>
> ***(...)***
>
> ***(d) When individual sewage systems overlay a drinking water aquifer, local health departments may establish population density limits and minimum lot sizes for residential development with on-site sewage treatment systems.***

> ***75-A.4***
>
> ***(...)***
>
> ***Where systems are to be installed above drinking water aquifers, a greater separation distance to bedrock may be required by the local health department having jurisdiction.***
>
> ***(...)***

L'implantation de systèmes de traitement par infiltration sur des terrains en pente de plus de 15% et dans la zone inondable de récurrence 0-10 ans est également prohibée (règlement, article 75-A.4).

> ***75-A.4 Soil and Site Appraisal.***
>
> ***(a) Site Investigation.***
>
> ***(1) Areas lower than the 10 year flood level are unacceptable for on-site systems. Slopes greater than 15% are also unacceptable.***
>
> ***(...)***

Le règlement sur les projets intermédiaires prévoit certaines mesures de précautions générales pour les installations susceptibles d'être affectées par des eaux de crues.

> ***B.5 Locating Facility Relative to Flood Plains***
>
> ***If feasible, on-site waste disposal systems should be located to avoid impairment to them or contamination from them during flooding. [...]***
>
> ***New and replacement sanitary sewage collection systems should be designed to minimize or eliminate infiltration of flood waters. Sanitary sewer and storm drainage systems for buildings that have openings below the base flood elevation should be provided with automatic backflow valves or other automatic back flow devices installed in each discharge line passing through a building's exterior wall.***

On y retrouve également des restrictions sommes toutes comparables pour la construction sur des sites en pente moyenne.

> ***E.8 Absorption Trenches/Beds***
>
> ***For sloping sites greater than 5 percent, distribution laterals should be spaced to avoid groundwater mounding. This can be accomplished with a few but long distribution laterals parallel to the site contour, or short trenches parallel to the site contour with increased spacing between trenches. For well-drained soils that demonstrate the necessary assimilative capacity, trenches may be placed on sites with a maximum slope of 20 percent. For poorly drained soils, trenches may be placed on sites with a maximum slope of 15 percent. Beds should be limited to sites with slopes of no greater than 5 percent.***

7.12 TOILETTES : Toilettes à compost, toilettes chimiques et toilettes à incinération

Le règlement (article 75-A.10) prévoit un encadrement général des toilettes « alternatives ».

> ***75-A.10 Other Systems.***
>
> ***(...)***
>
> ***(b) Non-Waterborne Systems.***
>
> ***(1) General. In certain areas of the State where running water is not available or is too scarce to economically support flush toilets, or where there is a need or desire to conserve water, the installation of non-waterborne sewage systems may be considered however, the treatment of wastewater from sinks, showers, and other facilities must be provided when non-flush toilets are installed. Household wastewater without toilet wastes is known as greywater.***
>
> ***(2) Composters. These units shall be installed in accordance with the manufacturers instructions. The units shall have a label indicating compliance with the requirements of National Sanitation Foundation (NSF) Standard 41 or equivalent. Only units with a warranty of five years or more shall be installed.***
>
> ***(3) Chemical and Recirculating Toilets.***
>
> ***(i) Chemical toilets provide a toilet seat located directly above a vault containing chemicals to disinfect and remove odors from the wastewater. Recirculating toilets use chemicals as the toilet flush fluid. The wastes are separated from the fluid, wastes discharged to an internal holding tank, and the fluid reused.***
>
> ***(ii) The liquids used in these types of toilets do not completely disinfect the wastes; therefore, waste products from these units shall not be discharged to surface waters or to the ground surface.***
>
> ***(iii) The reduced volume wastewater from recirculating toilets may be discharged to a larger holding tank but not to a subsurface absorption system.***
>
> ***(4) Incinerator Toilets. These units accept human waste into a chamber where the wastes are burned. They have a very limited capacity and require a source of electricity or gas. The ash remains must be periodically removed. They must be installed according to the manufacturer's instructions.***
>
> ***(5) Greywater Systems. Greywater systems shall be designed upon a flow of 75gpd/bedroom and meet all the criteria previously discussed for treatment of household wastewater.***

Le règlement sur les projets intermédiaires n'aborde quant à lui pas un encadrement spécifique pour ce type de toilettes.

7.13 PERMÉABILITÉ DU SOL :

Le règlement ne catégorise pas la perméabilité des sols en fonction de plages de perméabilité comme au Québec. La conception des ouvrages d'infiltration est basée sur un temps de percolation associé à un taux de charge hydraulique. De plus, les taux de charge hydraulique varient en fonction du type de système d'infiltration (tableaux 4A, 4B, 5 et 6).

TABLE 4A
REQUIRED LENGTH OF ABSORPTION TRENCH
(IN FEET)
(BASED UPON 2 FOOT WIDE TRENCH)

Percolation Rate min/inch	Daily Flow Rate (gallons per day)														
	2 Bedrooms			3 Bedrooms			4 Bedrooms			5 Bedrooms			6 Bedrooms		
	220	260	300	330	390	450	440	520	600	550	650	750	660	780	900
1 – 5	92	108	125	138	162	187	184	216	250	230	270	312	275	325	374
6 – 7	110	130	150	165	195	225	220	260	300	275	325	375	330	390	374
8 – 10	123	145	167	184	217	250	245	290	333	306	360	417	367	433	450
11 – 15	138	162	188	207	244	281	275	325	375	344	406	469	413	488	500
16 – 20	158	186	214	236	279	321	315	372	429	393	464	536	472	557	563
21 – 30	184	217	250	275	325	375	367	433	500	459	542	625	550	650	643
31 – 45	220	260	300	330	390	450	440	520	600	550	650	750	660	780	750
46 – 60	245	290	333	367	433	500	489	578	667	612	722	833	734	867	1000
Dosing required if there is 500-feet or more of total trench length															
* Alternate Dosing required if there is 1000-feet or more of total trench length															

TABLE 4B
APPLICATION RATES FOR
NON-STANDARD DESIGN FLOWS

Percolation Rate (minutes/inch)	Application Rate (gal/day/sq. ft.)
1 - 5	1.20
6 - 7	1.0
8 - 10	0.90
11 - 15	0.80
16 - 20	0.70
21 - 30	0.60
31 - 45	0.50
46 - 60	0.45
Soil with a percolation rate of less than 1 minute/inch is unsuitable for a conventional system	
Required Area (sq. ft.) = Flow Rate (GPD)/Application Rate (GPD/sq. ft.)	
Required Absorption Trench Length = Required Area (GPD)/2 feet (trench width)	

TABLE 5 ABSORPTION BEDS - REQUIRED BOTTOM AREA	
Percolation Rate (minutes/inch)	Application Rate (gal/day/sq. ft.)
1 - 5	0.95
6 - 7	0.80
8 - 10	0.70
11 - 15	0.60
16 - 20	0.55
21 - 30	0.45
30+	Not Acceptable

TABLE 6
SEEPAGE PITS - REQUIRED ABSORPTIVE AREA FOR HOUSEHOLD SYSTEMS
(IN SQUARE FEET)

Percolation Rate min/inch	Sewage Application Rate (gpd/sq. ft)	Flow Rate														
		2 Bedrooms			3 Bedrooms			4 Bedrooms			5 Bedrooms			6 Bedrooms		
		220	260	300	330	390	450	440	520	600	550	650	750	660	780	900
1 – 5	1.20	183	217	250	275	325	375	367	433	500	458	542	625	550	650	750
6 – 7	1.00	220	260	300	330	390	450	440	520	600	550	650	750	660	780	900
8 – 10	0.90	244	289	333	367	433	500	489	578	667	611	722	833	733	867	1000
11 – 15	0.80	275	325	375	413	488	563	550	650	750	688	813	938	825	975	1125
16 – 20	0.70	314	371	429	471	557	643	629	743	857	786	929	1071	943	1114	1286
21 – 30	0.60	367	433	500	550	650	750	733	867	1000	917	1083	1250	1100	1300	1500
31 – 45	0.50	440	520	600	660	780	900	880	1040	1200	1100	1300	1500	1320	1560	1800
46 – 60	0.45	489	578	667	733	867	1000	978	1156	1333	1222	1444	1667	1467	1733	2000
Over 60	Unsuitable …. Use Special Design															

À titre d'exemple, pour un élément épurateur de type classique (en tranchées), le temps de percolation nécessaire de 60 min/pouces, soit de 25 min/cm. Le temps de percolation applicable est comparable à la limite de plage de perméabilité « perméable » utilisée au Québec.

Par contre, pour un élément épurateur de type modifié (lit d'infiltration), le temps de percolation maximum possible est de 30 min/pouces, soit de 12 min/cm. Un élément épurateur modifié peut donc être construit seulement dans la portion plus favorable de la zone de perméabilité « perméable » au Québec. Dans une telle situation, on constate qu'un équivalent d'élément épurateur modifié pour 3 chambres à coucher pourrait ainsi varier en superficie de 347 à 1000 pieds carrés (32 m² à 92 m²) selon le temps de percolation du terrain récepteur et le débit de conception.

Les systèmes réglementés pouvant être implantés dans des sols ayant une perméabilité plus faible, jusqu'à 120 min/pouce, soit environ 45 min/cm, comparable à la plage de perméabilité « peu perméable » dans le RETEURI sont différentes variations de systèmes de type filtre à sable hors-sol.

Dans des conditions de sol difficiles (sol imperméable ou une profondeur de sol trop mince) qui ne permettent pas d'installer un système d'infiltration, même hors-sol ou dans un remblai, le guide indique, pour les bâtiments existants, que les autorités locales doivent être impliquées (guide, article 1.3, page 15).

> ***(...)***
>
> ***For OWTSs located in sensitive areas or on difficult sites that need repair or replacement, the Local Healt Department should be contacted to obtain additional information, technical assistance, references, literature and research available regarding wastewater treatment technologies and methods. Specialized or critical situations may occur when soil is unsuitable, high ground water, rock or clay is too close to the ground surface, or concern exists over possible water supply (well or spring) contamination, stream impacts or lake eutrophication. In such cases, experienced professional consultation and special designs may be necessary. In some cases site and soil conditions preclude the use of OWTSs and centralized sewers will be required for site development.***

D'autre part, les rejets en surface (fossé ou cours d'eau) ne sont pas autorisés dans le règlement en vertu de l'article 75-A.8.

> ***75-A.8 Conventional Subsurface Treatment Systems.***
>
> ***(a) General for all treatment systems.***
>
> ***(1) All wastewater effluent from septic tanks or ETUs shall be discharged to a subsurface treatment system.***
>
> ***(...)***

Enfin, selon le règlement, l'utilisation de fosses de rétention est limitée aux résidences existantes et aux résidences saisonnières (article 75-A.10.).

> ***75-A.10 Other Systems.***
>
> ***(a) Holding Tanks. The use of holding tanks shall not be permitted for new home construction except where occupancy of a home is permitted while the sewage treatment system is under construction. Tank size shall be based upon five days design flow or 1,000 gallons, whichever is greater and meet the same construction as a septic tank except that the holding tank shall not have an outlet. Holding tanks are not acceptable for long term use on year-round residences.***

Le règlement sur les projets intermédiaires montre quant à lui une légère variation au niveau des taux de charge hydrauliques applicables selon la perméabilité des sols au tableau E-1.

Table E-1 Recommended Sewage Application Rates

Percolation Rate (mpi)	Typical Soil Type	Application Rate (gal /day/sq. ft.)
< 1	Gravel, Coarse Sand	Not suitable [42]
1-5	Coarse Medium Sand	1.20
6-7	Fine Sand, Loamy Sand	1.00
8-10	Fine Sand, Loamy Sand	0.90
11-15	Fine Sand, Loamy Sand	0.80
16-20	Sandy Loam, Loam	0.70
21-30	Sandy Loam, Loam	0.60
31-45	Loam, Porous Silt Loam	0.50
46-60	Loam, Porous Silt Loam	0.45
61-120	Silty Clay Loam, Clay Loam	0.20[43,44]
> 120	Clay	Not Suitable

Lorsque le sol est jugé imperméable au sens du RETEURI, le remplacement d'un sol de mauvaise qualité par un matériel de remblai apparait toutefois être une mesure courante et acceptable dans la mesure où son efficacité est démontrée par un professionnel.

> ***E.2 Application Rates***
>
> ***[...] If amending or replacing native soil, the percolation rate and replacement procedure must be documented by the design engineer and it may require approval by the Department. If the percolation rate or soil consistency is unacceptable for a conventional subsurface system, or the soil amendment process fails, a raised, mound, or sand filter system, or a surface discharge may be required instead.***

7.14 FORTES CONTRAINTES : Solutions pour les sites à fortes contraintes

Le tableau 4 du guide, à la page suivante, résume les conditions de sites requises pour les différents systèmes de traitement par infiltration proposés. Ce tableau démontre la possibilité de construire un système de type « champ de polissage » précédé d'un système de type « filtre à sable classique » « modified mound following a sand filter » avec une profondeur de sol peu perméable de 15 cm. L'utilisation de sable filtrant est toutefois nécessaire pour compenser la faible épaisseur de sol naturel.

TABLE 4

SITE REQUIREMENTS FOR DESIGN OF RESIDENTIAL ONSITE WASTEWATER TREATMENT SYSTEMS

Method of Subsurface Treatment	Depth of Percolation Test Hole for System Design (inches)	Minimum Required Depth of In-situ Useable Soil (i.e., 1-60 min/in unless otherwise stated) (feet)	Minimum Separation Between Trench Bottom and Boundary Condition (groundwater, soil mottling, bedrock, or impermeable strata) (feet)	Allowable Percolation Rate of site soil (min/inch)	Allowable slope of site (percent)
CONVENTIONAL SYSTEMS					
Conventional Absorption Trenches and Gravelless Trench Products	24 – 30	4	2	1 – 60	0 – 15 15 – 20[5]
Deep Absorption Trenches	at trench depth	4	2	1 – 60	0 – 15
Shallow Absorption Trenches	at trench depth[1]	2	2	1 – 60	0 – 15
Cut and Fill System	12 (into in-situ useable soil[2])	3	2	1 – 60	0 – 15
Absorption Bed	24 – 30	4	2	1 – 30	0 – 8
Seepage Pit	At pit depth and half of pit depth or at each usable soil layer	3 (from bottom of pit)	3 (from bottom of pit)	1 – 60	0 – 15
ALTERNATIVE SYSTEMS					
Raised System	12	1	2 (if dosing device used[3])	1 – 60	0 – 15
Mound	12	1	2 (to ground water), 3 (to bedrock[4])	1 – 120	0 – 12
Intermittent Sand Filter	_____	0	2	_____	0 – 15
modified mound (following a sand filter)	6 and 12	0.5	after placement of fill: 2.5 (to groundwater), 4 (to bedrock)	1 – 120 at 6" unlimited at 12"	0 – 12
modified shallow trench (following a sand filter)	6 and 12	1	0.5	1–60 at 6" unlimited at 12"	0 – 15

NOTES:

1) A percolation test must be conducted at the depth of the bottom of the proposed trenches. If the trench bottoms will be between grade and six (6) inches deep, conduct the test at six (6) inch depth.

2) A percolation test must also be conducted 24-30 inches below grade in stabilized soil (in-situ or fill). The slower of the two (2) percolation rates shall be used for design of the system.

3) If no dosing device is used, a minimum of three (3) feet of usable soil must be present beneath the bottom of the trenches (requires local health department inspection and certification program).

4) There must be at least two (2) feet of naturally occurring soil above bedrock.

5) With additional trench spacing and depth of useable soil as described in Section 9.6.4.1 of this Handbook.

Également, il est important de noter que le respect intégral des dispositions du règlement vise les nouveaux bâtiments. Le guide précise d'ailleurs, à la page 13, que les autorités locales peuvent autoriser des dérogations pour des bâtiments existants et dans des conditions particulières.

> ***(...)***
>
> ***New construction should routinely meet the standards established in Appendix 75-A; however, Section 75.3(d) of Part 75 and Section 75-A.11 of Appendix 75-A provide the option for the jurisdictional health department to issue a specific waiver for an individual situation because a hardship or other circumstance makes it impractical to comply with a design standard(s) specified in Appendix 75-A. Although specific waivers are not required for correction or replacement of existing failing residential OWTSs, local health departments (LHDs) may elect to issue specific waivers for such systems. Specific Waivers are discussed in Section 9.7 of this handbook.***
>
> ***(...)***

L'article 75-A.11 prévoit une procédure de dérogation aux normes du règlement.

> ***75-A.11 Specific Waivers.***
>
> ***Deviations from these standards may be granted by the State Commissioner of Health or the designated full-time city, county or part-county health department official by issuance of a Specific Waiver in accordance with 10NYCRR Part 75, Section 75.6(b) of this Title.***

Le règlement sur les projets intermédiaires oriente plutôt vers des systèmes hors-sol dans des conditions de sol dont l'épaisseur est insuffisante en utilisant une couche de remblai de l'épaisseur nécessaire à créer le terrain récepteur propice.

> ***E.14 Mound Systems***
>
> ***A mound is a soil absorption system elevated above the natural soil surface in fill material. While a Raised System relies upon both fill material and existing natural soil for treatment, a mound system relies on only fill material to provide treatment and existing natural soil for wastewater dispersal. Mounds may be used when conditions preclude the use of a conventional absorption system. These conditions include slowly permeable soils, shallow soils over bedrock, and soils with high water tables. Using mounds is discouraged. They should be used only when no other method of subsurface disposal is feasible. For the mound system design, approval by the Reviewing Engineer may be necessary.***

Ce règlement détaille également une variété de différents systèmes technologiques visant à traiter les eaux usées (boues activées, marais filtrants, traitement chimique, etc.) mais sans faire les liens avec le mode de rejet qu'ils permettent ainsi de privilégier.

7.15 ÉTUDES : Études préalables et mise aux normes

Le règlement prévoit qu'une étude de caractérisation de site doit-être réalisée avant la construction d'une installation septique. Les exigences relatives à cette évaluation du site sont décrites à l'article 75-A.4. De manière générale, le règlement n'encadre toutefois pas la procédure d'émission du permis et n'établit donc pas spécifiquement d'éléments plus détaillés à fournir sous forme d'une liste.

> ***75-A.4 Soil and Site Appraisal.***
>
> ***(...)***
>
> ***(c) Soil Investigation.***
>
> ***(1) The highest groundwater level shall be determined and shall include the depth to the seasonal high groundwater level and the type of water table - perched, apparent, or artesian.***
>
> ***(2) If a subsurface treatment unit such as an absorption field is planned, at least four feet of useable soil shall be available over impermeable deposits (i.e., clay or bedrock). Highest groundwater level shall be at least two feet below the proposed trench bottom. Where systems are to be installed above drinking water aquifers, a greater separation distance to bedrock may be required by the local health department having jurisdiction. At least one test hole at least six feet deep shall be dug within or immediately adjacent to the proposed leaching area to insure that uniform soil and site conditions prevail. If observations reveal differing soil profiles, additional holes shall be dug and tested. These additional holes shall be spaced to indicate whether there is a sufficient area of useable soil to install the system. Treatment systems shall be designed to reflect the most severe conditions encountered. If the percolation tests results are inconsistent with field determined soil conditions, additional percolation tests must be conducted and the more restrictive tests must be the factor used for the system design.***
>
> ***(3) Test holes for seepage pits shall extend to at least mid-depth and full depth of the proposed pit bottom. At least three feet of useable soil shall exist between the pit bottom and rock or other impermeable soil layer and the highest groundwater level. This shall be confirmed by extending at least one deep test hole three feet below the deepest proposed pit.***
>
> ***(4) A local health department may accept or require other soil tests in lieu of the***
>
> ***percolation test when such tests are conducted or observed by local health department personnel.***
>
> ***(d) Soil Percolation Test.***
>
> ***(1) At least two percolation tests shall be made at the site of each proposed sewage treatment system.***

> ***(2) For seepage pits, one test shall be conducted at the bottom depth, and the other at half the pit depth. If different soil layers are encountered when digging the test pit, a percolation test shall be performed in each layer with the overall percolation rate being the weighted average of each test based upon the depth of each layer. The local health department having jurisdiction may adopt an alternative procedure for determining the permeability of soil for the installation of seepage pits.***
>
> ***(3) A percolation test is only an indicator of soil permeability and must be consistent with the soil classification of the site as determined from the test holes.***

De plus, tel que mentionné au point 5, la conception des installations septiques doit être réalisée par des professionnels puisqu'il s'agit d'un acte réservé à certaines catégories de profession.

Le contenu ventilé des éléments devant faire partie de la demande de permis n'est toutefois pas encadré plus spécifiquement par le règlement. On en comprend que les autorités locales responsables d'analyser les projets s'en remettent à des procédures ou formulaires internes pour s'assurer que les demandes sont suffisamment complètes pour juger des différents aspects qu'ils doivent évaluer avant de statuer sur des demandes.

Le principe général prévoit que le dimensionnement de l'installation doit tenir compte de l'ajout de chambre éventuel et que le système est réputé devoir être conforme aux principes de dimensionnement du règlement et du guide. Malgré que nous n'ayons pas trouvé de référence explicite, nous comprenons que la mise aux normes selon la version en vigueur au moment de la conception est obligatoire en cas d'augmentation de débit. L'encadrement est toutefois beaucoup moins spécifique sur cet aspect que la réglementation québécoise. Il ne définit conséquemment pas de procédure spécifique à ces situations telles que la mise aux normes partielle ou la modification des conditions d'exploitations d'une installation et donc l'exemption ou non d'une certaine partie de la démarche ou de la documentation à fournir. Ceci-dit, tel que mentionné précédemment, la procédure de dérogation « waivers » s'applique aux situations existantes.

Le règlement sur les projets intermédiaires reste lui aussi très général sur la procédure d'émission de permis. Une étude du site et une représentation du projet sont à fournir mais toute information pertinente peut également être requise au jugement.

> ***A.2 Planning and Permit Application Process***
>
> ***Construction of a new or modified wastewater treatment system requires regulatory authorization. (See Appendix A "Wastewater Treatment System Regulatory Framework in New York State") The first step in the process should be to contact the Regional Permit Administrator to arrange a preapplication***

> ***conference. Typically, the initial consultation with NYSDEC should be with the Division of Environmental Permits' Regional Office serving the county where the project is proposed. Applicants find this meeting helpful for explaining a proposed project to NYSDEC and other interested agencies. Preliminary answers to questions about project plans, and permit application procedures are typically provided to the applicant at this conference. In this conference issues such as garbage grinder use in an onsite system is addressed (and should be accounted for in septic tank sizing per Section D.6).***
>
> ***A complete submission for a project should include SEQR documentation (see Section A.4); an engineering or wastewater facilities report including detailed engineering plans that demonstrate compliance with applicable design standards, a SPDES permit application (see A.4 below); a location map (1:24,000 scale topographic); and a site plan showing existing structures, roads, watercourses, two- foot (2') contours to facilitate slope calculations, and specific features such as drainage channels, low areas and changes in slope. Additional specific mapping/site plan requirements (with appropriate scale(s)) may be negotiated at the preapplication meeting and could include some or all of the following:***
>
> ***• Soils***
>
> ***• Slopes***
>
> ***• Surface structures (roads, parking lots, structures of all types)***
>
> ***• Subsurface structures***
>
> ***• Areas of special environmental concern***
>
> ***• Areas of special historical concern***
>
> ***• Depth to groundwater***
>
> ***• Recharge areas***
>
> ***• Primary and principal aquifers***
>
> ***• Wetlands and buffers***
>
> ***• Streams and buffers***

La gestion des situations de modifications partielles, réparation, changement de vocation, augmentation de débit, etc. est également moins spécifique que la réglementation québécoise actuelle et donc désuète à cet effet.

7.16 AUTRES :

Éléments du Q-2, r.22 qui sont couverts par le territoire visé

Définitions	X
Hiérarchie du choix d'un système	
Obligation de vidange des fosses septiques	X
Méthodes pour établir la perméabilité du sol	X
Plages de perméabilité	
Référence aux normes BNQ/NSF	X
Normes de construction des fosses construites sur place	X
Préfiltre	X
Norme spécifique au déboisement (élément épurateur classique)	
Conduite d'amenée, raccordements et ventilation	X
Champ d'application du Règlement/type d'eau	X
Prohibition de rejeter des eaux usées	
Interdiction d'utiliser certains produits (désinfection de ces eaux usées)	
Conditions d'émission des permis (plan, études, etc.)	X
Implication d'un professionnel compétent pour la conception (Ordre professionnels)	X
Désaffectation des systèmes	
Gestion des boues et des autres résidus	
Cheminement des eaux et des effluents	
Normes de localisation pour les systèmes étanches et les systèmes non étanches	X
Normes techniques à respecter (matériaux, dimensions, etc.)	X
Conditions d'implantation des systèmes (pente, perméabilité, épaisseur de sol naturel, etc.)	X
Obligation d'entretien et/ou de maintenir un contrat d'entretien des systèmes certifiés	
Normes de rejet des systèmes	
Systèmes spécifiquement pour des résidences/bâtiments existants	X
Toilettes à compost	X
Cabinet/toilettes sèches	
Solutions si ségrégation des eaux (toilettes vs eaux ménagères) (ex : vidange périodique)	
Déclencheurs/droits acquis pour la mise aux normes de systèmes existants	
Dispositions encadrant les rejets au fossé/cours d'eau	X
Déphosphatation	
Désinfection	X
Méthodes de prélèvement et d'analyse des rejets des systèmes	
Définit la responsabilité des municipalités pour l'application du Règlement	X
Amendes/infractions	
Dispositions applicables à des territoires particuliers (Basse-Côte-Nord Iles-de-la-Madeleine, etc.)	

Éléments couverts par le territoire visé et qui ne sont pas traités dans le Q-2, r.22

- Le règlement recommande de conserver un espace disponible pour le remplacement éventuel du système d'infiltration. (article 75-A.4).

> ***(5) Once the required infiltration area is determined by daily flow, percolation tests and soil evaluation, the required useable area of the property for subsurface treatment can be found. An additional useable area of 50 percent shall be set aside for future expansion or replacement whenever possible.***

SOURCES New York:

4. *State of New York, Title 10, Department of Health, Chapter 2 Part 75, Standards for individual onsite water supply and individual onsite wastewater treatment systems, Appendix 75-A, March 16, 2016*
5. *New York State Department of Health, Bureau of water supply protection, Residential onsite wastewater treatment systems – Design Handbook, 2012*
6. *https://hudsonvalleyregionalcouncil.org/wp-content/uploads/2019/08/D-Onsite-wastewater-systems-Final-1-29-2018.pdf*
7. *New York State Department Of Health, Residential Onsite Wastewater Treatment Systems, FACT SHEET #1, Need for Licensed Design Professionals - Residential Onsite Wastewater Treatment Systems, January 2014.*
8. *NSF International, http://www.nsf.org/, novembre 2019*

8.0 OHIO

8.1 ENCADREMENT :

Dans l'État de l'Ohio, c'est le département de la Santé « Ohio Department of Health » qui est responsable de mettre en place le cadre réglementaire relatif au domaine du traitement des eaux usées. Deux documents légaux récents sont en application. Les textes pertinents sont :

- Le document « Ohio Revised Code, Title 37 Healt, Safety, Morals, Chapter 3718 : Sewage Systems » est en vigueur depuis 2005. La dernière mise à jour date de 2016. (ci-après la Loi).
- Le « Ohio Administrative Code, Chapter 3701-29, Sewage Treatment System Rules », ci-après, le règlement, est en vigueur depuis 2015 et établit les paramètres techniques du traitement des eaux usées.

L'application du règlement est sous la responsabilité des autorités locales (règlement page 12).

> ***The department of health and the board of health are responsible for implementation of this chapter. The department of health shall provide written technical guidance and rule interpretation to the board of health upon request.***

Il vise les installations septiques générant un débit journalier maximal de 1000 gallons/jour, soit 3785 L/jour (règlement pages 5 et 9). Les systèmes pouvant traiter un plus grand volume d'eau sont sous la responsabilité du « Ohio Department of Health ». Dans un tel cas, le processus d'approbation est au cas par cas selon les exigences de l'État.

> ***"Household sewage treatment system" or "HSTS" means any sewage treatment system, or part of such a system, that receives sewage from a single-family, two-family, or three-family dwelling. For the purposes of this chapter structures that are served by a household sewage treatment system shall also include:***
>
> ***(1) A dwelling and related structure, such as a barn or personal garage, when the users of the structure are only the residents of the dwelling, and provided the related structure is not used as a dwelling.***
>
> ***(2) A dwelling with a home business when the nature of the home business is such that it does not produce sewage.***
>
> ***(3) Vacation rental cabins, provided there is a separate HSTS for each cabin.***
>
> ***(4) A bed and breakfast, residential facility, or other residence as described in divisions (B)(2), (B)(4), and (B)(13) of section 3717.42 of the Revised Code.***
>
> ***(5) Group homes occupied by no more than sixteen unrelated individuals, including, but not limited to, a hospice and pediatric respite care facility as defined in rule 3701-19-01 of the Administrative Code, a foster home, group home, group***

home for children, Indian foster home, residential facility, children's residential center, or residential parenting facility as defined in Chapter 5101:2-1 of the Administrative Code, or a type A home as defined in rule 5101:2-13-02 of the Administrative Code, a residential facility defined in rule 5122-30-03 of the Administrative Code, or a residential facility defined in section 5123.19 of the Revised Code.

"Small flow on-site sewage treatment system" or "SFOSTS" means a system, other than a household sewage treatment system that treats 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. For the purposes of this chapter, structures that are served by a small flow on-site sewage treatment system shall also include:

(1) More than one dwelling or arrangements such as a dwelling and a detached garage with living space.

(2) More than one vacation rental cabin.

(3) A dwelling and related structure, such as a barn or personal garage, when the structure is used by persons other than, or in addition to the residents of the dwelling.

(4) A dwelling with a home business when the nature of the home business is such that it produces sewage, including but not limited to, home businesses that provide a public restroom for use by nonresidents.

8.2 TYPE D'EAU : Types d'eau visés par l'encadrement

Le règlement encadre les eaux usées de nature domestique. Il n'y a pas de distinction pour l'usage du bâtiment ou le type d'établissement (salon de coiffure, atelier de mécanique, etc.) (règlement page 8). Toutefois, tout polluant de nature industriel est spécifiquement exclu (règlement, article 3701-29-06 (7)). Au besoin, une ségrégation des eaux peut être utilisée de manière à traiter seulement la portion domestique alors que le reste des eaux relève de la juridiction de l'État.

> ***"Sewage" means liquid waste containing animal or vegetable matter in suspension or solution that originates from humans and human activities. Sewage includes liquids containing household chemicals in solution commonly discharged from a residence or from commercial, institutional, or other similar facilities.***

> ***(7) No STS shall be permitted for the holding, treatment, or dispersal of industrial waste or storm water for industrial activities. For the purpose of this rule, the normal use of housekeeping products does not constitute industrial waste.***

Les eaux à charges élevées font également partie du cadre du règlement mais nécessitent un prétraitement afin d'être ramenées a des paramètres d'eaux domestiques.

> ***3701-29-11 Flow estimation and waste strength***
>
> ***(C) The waste strength estimate for a STS shall be determined for design purposes. Waste strength for sewage received by a HSTS shall be considered typical residential sewage strength when, after primary treatment, the waste strength does not regularly exceed the TSS content of three hundred thirty milligrams per liter, the BOD_5 content of two hundred fifty milligrams per liter, or the fats, oils, and grease content of twenty five milligrams per liter. Waste strength estimates for SFOSTS shall be determined from the waste strength ranges in table A-1 of rule 3745-42-05 of the Administrative Code.***
>
> ***(D) Any waste prohibited by UIC regulations for introduction into a SFOSTS shall be source separated and regulated by Ohio EPA.***
>
> ***(E) When the waste strength for a STS is expected to exceed or has exceeded the typical residential sewage strength:***
>
> ***(1) The use of additional treatment components that are approved by the director of health shall be included in the STS design prior to soil treatment and/or dispersal or a pretreatment component approved by the director for meeting specified effluent quality standards. The method of treatment to reduce waste strength shall be justified in the design, reviewed by the board of health for compliance with this chapter, and if approved, shall be documented on the installation permit and operation permit.***

> ***(2) Alternative soil loading rate values that vary from these rules may be used to address concerns of increased CBOD5 loading from a STS. These alternative soil loading rates shall be documented and justified in the design including waste strength characterization information. Board of health approval for any increase in loading estimates shall be documented on the installation permit and operation permit.***

Les eaux domestiques doivent exclure l'eau provenant de certains usages ou appareils comme les gouttières ou les drains de fondation. Les rejets d'adoucisseurs d'eau sont toutefois permis selon les dispositions de l'article suivant.

> ***3701-29-06 General provisions and prohibitions.***
>
> ***(E) A STS or GWRS shall comply with the following performance requirements and prohibitions:***
>
> ***(6) No STS or GWRS shall receive water from roof, foundation, clear water sumps, swimming pools, or other sources that do not convey or generate sewage from the structures served by the STS. An appropriately sized STS may receive brine discharge from a water softener unless otherwise prohibited by a manufacturer through the product specific approval by the director of health, a permit issued by the board of health, or as required to repair a failing system.***
>
> ***(7) No STS shall be permitted for the holding, treatment, or dispersal of industrial waste or storm water for industrial activities. For the purpose of this rule, the normal use of housekeeping products does not constitute industrial waste.***

Enfin, le règlement contient des dispositions sur les pièges à matière grasse et sur les broyeurs à déchets (articles 3710-29-11 (F0 et (G)).

8.3 DENSITÉ MAXIMALE : Densité maximale des installations septiques

Le règlement inclut des dispositions relatives aux nouveaux lotissements visant à tenir compte de la densité d'occupation et de l'impact sur la ressource en eau.

> ***3701-29-08 Subdivisions and new lots.***
>
> ***(B) Any person proposing a subdivision or new lot(s) for review by the board of health shall submit an application and sufficient information to determine compliance with the requirements of this chapter. Minimum information to be submitted or completed for review shall include the following:***
>
> ***(6) When a proposed subdivision includes the creation of at least twenty-five lots, or for any fewer numbers of lots as required by the board of health, the request shall include written consultation from Ohio EPA concerning the subdivision's accessibility to existing sanitary sewerage systems as described in paragraph (I) of rule 3701-29-06 of the Administrative Code, and risks to surface and ground water resources.***
>
> ***(7) When subdivisions are proposed within the boundaries of an inner management zone of a public water system, or located within a hydrogeologically sensitive area as delineated on a ground water pollution potential map from the Ohio department of natural resources, the application shall include the map or inner management zone information and how the proposed density and design of the STS shall ensure adequate treatment of effluent prior to discharge to groundwater.***

Ces dispositions sont d'ordre général et visent tous les types de systèmes sur l'ensemble du territoire de l'État.

8.4 REJETS : Rejets en surface

En vertu du document d'appel d'offres, ce sujet n'est pas visé pour ce territoire.

8.5 CONTAMINANTS : Contaminants encadrés

Les contaminants discutés dans le règlement sont : DBO5, MES, huile et graisse, coliformes fécaux et l'azote. Au sens du règlement les eaux usées de nature domestique doivent rencontrer les concentrations suivantes en DBO5, MES et huiles et graisses (article 3710-29-11 (C)).

> ***3701-29-11 Flow estimation and waste strength***
>
> ***(C) The waste strength estimate for a STS shall be determined for design purposes. Waste strength for sewage received by a HSTS shall be considered typical residential sewage strength when, after primary treatment, the waste strength does not regularly exceed the TSS content of three hundred thirty milligrams per liter, the BOD_5 content of two hundred fifty milligrams per liter, or the fats, oils, and grease content of twenty five milligrams per liter. Waste strength estimates for SFOSTS shall be determined from the waste strength ranges in table A-1 of rule 3745-42-05 of the Administrative Code.***

Les systèmes de traitement avancés « Technologies » doivent atteindre des critères de traitement en DBO5, MES et coliformes fécaux. Des modalités de réduction d'azote peuvent également être ajoutées à certains milieux sensibles.

> ***3701-29-14 Effluent quality standards.***
>
> ***Technologies must meet the following performance based effluent quality standards as applicable to be considered for approval by the director for reductions in soil absorption area sizing, soil depth credits, nutrient reduction, or reduction of high strength waste before distribution to a soil absorption component:***
>
> ***(A) $CBOD_5$/TSS standard to use STS sizing criteria addressed in paragraph (N) of rule 3701-29-15 of the Administrative Code requires that effluent meet the mean plus one standard deviation of less than twenty-five milligrams per liter for $CBOD_5$ and thirty milligrams per liter for TSS. This standard shall apply to all pretreatment components approved or reviewed for renewal after the effective date of this chapter.***
>
> ***(B) Standards that use the soil depth credits or other applicable provisions of rule 3701-29-15 of the Administrative Code require that effluent meet the geometric mean plus two standard deviations of the mean of:***
>
> ***(1) Less than or equal to ten thousand fecal coliform CFU per one hundred milliliters or 5150 E. coli CFU per one hundred milliliters allows for a twelve inch soil depth credit;***
>
> ***(2) Less than or equal to one thousand fecal coliform CFU per one hundred milliliter or 515 E. coli CFU per one hundred milliliters allows for a twenty four inch soil depth credit;***

> ***(3) Less than or equal to two hundred fecal coliform CFU per one hundred milliliters or 103 E. coli CFU per one hundred milliliters required for restricted surface application; or***
>
> ***(4) Less than or equal to twenty fecal coliform CFU per one hundred milliliters or 10 E. coli CFU per one hundred milliliters required for unrestricted surface application.***
>
> ***(C) Nutrient reduction standards for pretreatment components may be established by the director or board of health when there is a significant risk of nutrient contamination to surface or ground water due to risk factors identified in the site review or other types of water quality assessments, or risk due to proximity to local, state, or federally recognized nutrient sensitive environments.***
>
> ***(1) When total nitrogen reduction is required, pretreatment components that meet a fifty per cent reduction in the total nitrogen concentration (average influent and effluent total nitrogen concentrations and the actual percentage of removal are provided) as demonstrated by ANSI/NSF Standard 245, BNQ Standard NQ 3680-910, CEN Standard EN 12566-3 data or equivalent shall be used.***
>
> ***(2) Other nutrients standards may be established by the director or board of health as needed for an area including higher nitrogen reduction or other nutrients.***
>
> ***(D) Reduction of high strength waste standards for systems receiving sewage from a source(s) producing or expected to produce sewage of a higher strength than typical residential sewage as described in paragraph (C) of rule 3701-29-11 of the Administrative Code requires demonstration of the ability to reduce specified waste strengths to the typical residential sewage strength standard established in this chapter as determined by the director of health and sewage treatment systems technical advisory committee***

Les modalités d'échantillonnage (fréquence) ne sont pas explicitement prévues par le règlement. Toutefois, l'article 3701-29-13 précise certaines obligations.

> ***3701-29-13 Product standards, review, and operation and maintenance.***
>
> ***(F) Pretreatment components shall be designed to have effluent sampling capability at the endpoint of the treatment process prior to dispersal to the soil or discharge to the surface and should be designed with consideration of accessibility and safety. These components shall be designed and sampled as follows:***
>
> ***[...]***

(2) Samples shall be collected in compliance with all applicable standards and ODH-provided sampling guidance or other manufacturer produced, product specific collection guidance and the following:

(a) Grab samples shall be collected from a free falling stream of sufficiently low flow to enable proper sample collection at the end of the discharge pipe, valved pressured discharge piping, or in the provided inspection port;

(b) Unless otherwise unable to collect a free flowing grab sample, sampling should not be collected from stagnant water or inside a component of the system; and

(c) Composite samples may be collected in lieu of grab samples for suspended solids, CBOD5 and nutrients, if allowed by the general household NPDES permit.

[...]

(P) STS pretreatment components shall be operated, maintained, and monitored as necessary to ensure compliance with any applicable effluent quality standards established in this rule or the final effluent limitations set forth in a NPDES permit issued by the Ohio EPA. Devices critical to the performance of pretreatment components shall be maintained as manufacturer's original equipment matching the system configuration approved by the director.

8.6 CERTIFICATION : Entité responsable d'effectuer la certification des différents intervenants et des technologies

Les bureaux de la santé locaux « board of health » sont responsables de l'enregistrement des installateurs, fournisseurs de service et vidangeurs.

> ***3701-29-03 Registration of installers, service providers, and septage haulers.***
>
> ***(A) Except as provided in paragraph (M) of this rule, only persons registered by the board of health as an installer, septage hauler, or service provider shall perform the duties defined in paragraphs (FFF), (JJJJ), or (OOOO) of rule 3701-29-01 of the Administrative Code, respectively.***

Le processus de certification des installateurs, fournisseurs de service et vidangeurs comporte essentiellement un nombre d'heure de formation obligatoire ainsi qu'un cautionnement minimal à maintenir.

La caractérisation d'un site doit être réalisée par une personne certifiée selon les dispositions de l'article ci-dessous.

> ***3701-29-07 Soil evaluation and soil evaluators.***
>
> ***(A) [...] Soil evaluations shall be completed by:***
>
> ***(1) A soil scientist or soil classifier certified by the soil science society of America (SSSA) completing the soil evaluation while acting as an independent agent of the owner or board of health;***
>
> ***(2) A SSSA associated professional soil scientist that is supervised by a SSSA certified soil scientist completing the soil evaluation while acting as an independent agent of the owner or board of health;***
>
> ***(3) A soil professional registered by a state or national organization with equivalent minimum qualifications and/or demonstration of competency for soil evaluation as approved by the director of health;***
>
> ***(4) A registered sanitarian employed by the board of health having jurisdiction where the soil evaluation is to take place completing the soil evaluation on behalf of the board of health when the employee is determined by the board of health to be capable of meeting the tasks in paragraph (C) of this rule; or***
>
> ***(5) Other persons approved under a certification program or other training program as approved by the director of health.***

L'enregistrement des systèmes de traitement avancés « technologies » relève de l'État qui peut en approuver l'utilisation à la suite de la démonstration de ses performances dans le cadre d'un processus expérimental.

> ***3701-29-22 Variances and more stringent standards.***
>
> ***[…]***
>
> ***(B)Experimental systems may be permitted by the board of health under the provisions of paragraph (A) of this rule provided the director of health concurs in writing with the design, evaluation, and operation and maintenance plan.***
>
> ***[…]***
>
> ***(D) STS components or systems differing in design or principle of operation from those set forth in rules 3701-29-01 to 3701-29-23 of the Administrative Code, may qualify for approval as a special device or system upon review and recommendation by the sewage treatment systems technical advisory committee to the director of health as authorized under section 3718.04 of the Revised Code. A comprehensive design review, tests or sampling results, and related investigations must demonstrate that any such component or system produces results equivalent to those obtained by STS components or systems complying with such regulations. Such approval shall be obtained in writing from the director of health.***

De plus, les systèmes de traitement avancés certifiés selon des normes internationales (NSF, BNQ, etc.) sont également reconnus.

> ***3701-29-13 Product standards, review, and operation and maintenance.***
>
> ***(K) Pretreatment components not subject to review and approval under section 3718.04 of the Revised Code shall be submitted to the department for review and subsequent approval or disapproval by the director. Certification with one of the following third party testing protocols shall constitute sufficient proof of compliance with the CBOD5/TSS standard in paragraph (A) of rule 3701-29-14 of the Administrative Code:***
>
> ***(1) ANSI/NSF Standard 40 certification of compliance with current ANSI/NSF Standard 40 by an ANSI/CSA accredited third party certifier;***
>
> ***(2) BNQ Standard NQ 3680-910; or***
>
> ***(3) CEN Standard EN 12566-3.***

D'autres composantes utilisées dans la construction des installations septiques doivent être conformes à des standards ou des normes de certification. Voici quelques exemples :

- les fosses septiques CAN/CSA B66 ou ANSI Z1000 ou ASTM C1227
- les préfiltres NSF46,
- les toilettes à compost NSF41,
- les conduites Schedule 40 ou SDR 21
- les toilettes à incinération NSF P157
- etc.

8.7 CAPACITÉ : Capacité des fosses septiques

La capacité effective minimale des fosses septiques « Minimum liquid capacities » est indiqué à l'article 3701-29-12 ci-dessous. Le dimensionnement des fosses est déterminé par le nombre de chambres à coucher ou selon le débit journalier des autres bâtiments.

> ***3701-29-12 Tanks, pumps and controls, and building sewers.***
>
> ***(C) Septic tanks used in a STS shall be labeled in accordance with ASTM C 1227, IAPMO/ANSI Z1000, or CAN/CSA-B66 and shall comply with the following requirements and specifications:***
>
> ***(1) Minimum liquid capacities:***
>
> ***(a) One to two bedrooms – one thousand gallons in one or two compartments.***
>
> ***(b) Three bedrooms – one thousand five hundred gallons in two tanks or compartments.***
>
> ***(c) Four to five bedrooms – two thousand gallons in two tanks or compartments.***
>
> ***(d) Six or more bedrooms – two thousand five hundred gallons plus an additional two hundred fifty gallons of tank capacity for each bedroom in two tanks or compartments.***
>
> ***(e) SFOSTS – one thousand gallons minimum in two tanks or compartments with at least two and one half times the daily design flow.***

8.8 VIDANGE : Encadrement de la vidange des fosses septiques

Le règlement ne prévoit pas de fréquence ou de méthode prédéterminée pour la vidange des fosses. Le département de la santé recommande que les fosses soient inspectées aux 3 à 5 ans et vidangées au besoin[13]. L'encadrement de la fréquence de vidange et de l'obligation de suivi est laissé à la discrétion des autorités locales.

> ***3701-29-20 Septage and sewage management.***
>
> ***(B) Septage and sewage management by the board of health shall include, but is not limited to, the following:***
>
> ***(1) Notification to septage haulers registered by the board of health of wastewater treatment plants that are authorized to accept septage or other available receiving locations for STS septage and sewage, if known.***
>
> ***(2) The evaluation and permitting of septage application sites and any prohibitions on the land application of domestic septage. Compliance with this rule and 40 C.F.R. 503 is required when land application is permitted by the board of health.***
>
> ***(3) Provision of information to STS owners on recommended time lines for removal of septage from STS components including more frequent removal when a garbage disposal is in use.***
>
> ***(4) Requirements for reporting of septage and/or sewage removal or pumping from septic tanks, pretreatment components, dosing tanks, holding tanks for dwellings, campers, recreational vehicles, marinas or other temporary uses, or portable toilets as applicable when required as a condition of an operation permit or as necessary to demonstrate compliance with this chapter.***

L'encadrement relatif à la vidange des fosses septiques est très limité dans le règlement. Il n'y a pas de méthode établie pour déterminer le moment de la vidange (fréquence ou mesurage). Conséquemment, il n'y a pas de distinction entre une utilisation annuelle ou saisonnière. Il n'y a d'exigence relative à une preuve de vidange non plus.

[13] https://www.epa.gov/sites/production/files/2017-07/documents/septicsmart_week_flyer_082415_508-v2.pdf

8.9 SUIVI : Nécessité de faire le suivi des installations septiques

Le suivi des installations ou l'entretien des installation septiques est abordé dans le règlement. D'abord, le propriétaire d'un système est lié, de manière générale, par des conditions d'émission du permis (article 3701-29-06). L'article 3701-29-09, précise d'avantage les attentes sur cet aspect.

> ***3701-29-06 General provisions and prohibitions.***
>
> ***(B) A STS or GWRS, as applicable, shall not be installed, altered, or operated without an approved permit from the board of health.***
>
> ***[...]***
>
> ***(3) The STS or GWRS owner shall comply with the conditions specified in an installation, alteration, and/or operation permit issued by the board of health, including, but not limited to requirements for securing a service contract and other maintenance requirements.***

Tel que précisé ci-dessous, les paramètres du suivi sont déterminés au cas par cas par les autorités locales « board of health shall specify any terms and conditions ».

> ***3701-29-09 Site review and permits for STS installation and operation.***
>
> ***[…]***
>
> ***No person shall operate a STS or a type 2, 3 or 4 GWRS without an approved and valid operation permit from the board of health. The owner, and/or a responsible management entity when applicable, shall comply with the terms and condition of the permit.***
>
> ***[…]***
>
> ***(2) The board of health shall specify any terms and conditions of the operation permit consistent with this chapter governing the operation, monitoring, maintenance, and abandonment of the STS including:***
>
> ***(a) Maintenance, operation, and monitoring requirements, including frequency of maintenance;***
>
> ***(b) Required effluent quality standards, as applicable; and***
>
> ***(c) Requirements for a service contract. An operation permit shall require a service contract for a STS under the following conditions and as otherwise required by the board of health:***
>
> ***(i) Any HSTS subject to a NPDES permit; or***
>
> ***(ii) When required as a condition of a STS component or system approval granted by the director of health.***

L'article 3701-29-04, prévoit une procédure de suivi par l'État.

> ***3701-29-04 Survey to determine compliance.***
>
> ***(A) The director of health shall survey each STS and gray water recycling program of the city and general health districts at least once every three years to determine whether there is substantial compliance with the requirements of Chapter 3718. of the Revised Code pertaining to health districts and the provisions of Chapter 3701-29 of the Administrative Code. The board of health shall provide all requested information to complete the survey.***
>
> ***[…]***

D'autre part, l'article 3701-29-19 prévoit que les autorités locales doivent mettre en place un programme de suivi des installations septiques. L'extrait ci-dessous illustre le cadre général de cette obligation. Le texte intégral de cet article est joint en annexe au présent document.

> ***3701-29-19 STS Operation and maintenance management, and system owner education.***
>
> ***(A) The board of health shall develop a program for the administration of O&M management for STS and GWRS and system owner education in compliance with division (A)(7) of section 3718.02 of the Revised Code and this chapter.***
>
> ***(1) O&M management and system owner education is required for all systems installed or altered after the effective date of this chapter.***
>
> ***(2) Boards of health shall work with interested stakeholders to develop a timeline and process for phasing in O&M management for prior installed systems and should consider risk factors such as system age, complexity and risks to public health when establishing the criteria and process for phasing in prior installed systems, except as provided in paragraph (B) of this rule.***
>
> ***(3) All STS that have been issued coverage under the general household NPDES permit after January 1, 2007 shall be included in the O&M management program.***
> ***[...]***

Il n'y a pas de disposition supplémentaire relative à un échantillonnage, autre que celles déjà exposées à la partie 5 du présent chapitre.

8.10 RESTRICTIONS : Restrictions quant à la localisation des installations septiques

Les normes de localisation des différentes composantes des installation septiques sont déterminées à l'article 3701-29-06 du règlement. Le règlement prévoit un dégagement général par rapport à toutes les composantes « All components of a STS » d'une installation septique. Des distances supplémentaires s'appliquent aux dispositifs d'infiltration dans le sol. Le règlement impose notamment des normes de localisation par rapport aux aires de circulation, droits de passages, fossés, etc.

> ***3701-29-06 General provisions and prohibitions.***
>
> ***(G) STS shall be sited in compliance with this chapter including the following:***
>
> ***(3) A STS shall maintain the following minimum horizontal isolation distances:***
>
> ***(a) All components of a STS shall be at least ten feet from any utility service line, roadway or road surface, driveway or other hardscape, property line or right-of-way boundary, properly sealed well, any building or other structure, areas with recorded easements, intermittent streams, swales, geothermal horizontal closed loop systems, irrigation lines and GWRS.***
>
> ***(b) A STS soil absorption component shall be at least fifty feet from any surface water impoundment, lake, river, wetland, perennial stream, and road cut-banks or stream cut-banks.***
>
> ***(c) All components of a STS shall be at least fifty feet from any water supply source and vertical open and closed loop geothermal heating and/or cooling system.***
>
> ***(d) Sewers and wastewater drains outside of the foundation of a building shall be located a minimum of ten feet from a water supply source or water distribution line when attainable except within five feet of the foundation where both lines enter a building and in circumstances when the water line and sewer line must cross. When a sewer line crosses a water service line, the following applies:***
>
> ***(i) Provide a minimum vertical distance of twelve inches between the outside of the water service line and outside of the sewer. This shall be the case where the water line is either above or below the sewer with preference to the water line located above the sewer.***
>
> ***(ii) At crossings, one full length of water pipe shall be located so both joints will be a minimum of ten feet from the sewer line and a twenty-foot section larger diameter pipe sleeve shall be installed on either the water service line or the sewer line and the pipe sleeve sealed at both ends. A water service line and sewer line shall not share the same trench except where they must cross.***
>
> ***(e) Watertight non-treatment devices or components for replacement systems may be installed within the required horizontal isolation distance provided they will not directly affect surface or subsurface water sources or other structures.***

> ***(f) Any more stringent horizontal isolation distance included as a condition of an approval by the director of health or defined in these rules for specific STS or treatment components.***

Le règlement contient d'autres dispositions relatives à la localisation des systèmes, notamment en lien avec une zone à risque d'inondation. Le règlement encadre aussi l'obligation de se raccorder à un réseau d'égout. Ces dispositions particulières sont reproduites ci-dessous.

> ***(H) STS shall not be sited under the following conditions:***
>
> ***(1) A new STS shall not be sited in an area identified as a flood way, and only below grade soil absorption components of a new STS may be sited within any part of the one hundred-year flood plain except where prohibited by federal, state, or local regulations or ordinances.***
>
> ***(2) A STS shall not be sited within a jurisdictional wetland subject to a U.S. army corps of engineers 404 permit and/or Ohio EPA 401 certification or within an isolated wetlands subject to sections 6111.02 to 6111.028 of the Revised Code.***
>
> ***(3) A STS shall not be sited within the sanitary isolation radius of a public water system well as determined in accordance with rule 3745-09-04 of the Administrative Code. A SFOSTS shall have additional design and/or O&M requirements when sited within the inner management zone of a drinking water source protection area determined to be highly susceptible to contamination by the Ohio EPA source water assessment and protection program for a community or non-transient non- community public water system as defined in rule 3745-81-01 of the Administrative Code.***
>
> ***(4) A STS shall not be sited in soil and site conditions that prohibit compliance with this chapter.***
>
> ***(I) A STS shall not be sited, permitted, or installed where a sanitary sewerage system is accessible, unless otherwise excepted by law. Whenever a sanitary sewerage system becomes accessible to a dwelling or structure served by a STS, the dwelling and/or structures shall be connected to the sanitary sewarage system and the STS abandoned in accordance with rule 3701-29-21 of the Administrative Code.***
>
> ***(1) In determining the accessibility of a sanitary sewerage system a board of health may consider the availability of connection, local or state ordinances or rules prohibiting or requiring connection, the technical feasibility of connection, the ability of the sanitary sewerage system and associated treatment facility to accept additional flows, and the distance from the foundation wall of the structure from which sewage originates to the nearest boundary of the right-of-way within which the sewer is located.***

> ***(2) The board of health shall consult with appropriate sewer entity personnel as necessary to determine sanitary sewerage accessibility.***

Il n'y a pas d'autre norme de localisation.

8.11 MILIEUX SENSIBLES :

Le règlement ne prévoit pas de mesures supplémentaires au sujet des lac, cours d'eau et milieux humides, autre que les distances de localisation mentionnées au point précédent.

Il n'y a pas de mesure particulière relative à la protection des boisés. Une clause relative aux systèmes hors-sol prévoit qu'il est recommandé de surdimensionner la surface d'infiltration dans le cas ou des souches devraient être laissées en place après l'opération de déboisement pour compenser la surface d'infiltration ainsi perdue.

> ***3701-29-15 APPENDIX B***
>
> ***Sand Mound***
>
> ***II. Limitations and Conditions for Use […]***
>
> ***(D) Sites with boulders or numerous trees are less desirable for a mound soil absorption component. Such conditions shall be avoided, when possible, or the design shall increase the basal area to compensate for losses due to boulders or flush cut trees and shall include special instructions for the basal area preparation under such conditions.***

Le règlement ne restreint pas la construction d'installations sur des sites en pente forte. Certains systèmes sont adaptés exclusivement à des sites en pente faible mais les systèmes à irrigation sont explicitement prévus pour des sites en pente de plus de 25% en prenant des mesures de sécurité appropriées.

> ***3701-29-15 APPENDIX C***
>
> ***Drip Distribution Systems***
>
> ***[…]***
>
> ***III. Site Limitations and Conditions for Use***
>
> ***(C) Drip distribution systems may be installed on a slope greater than twenty-five per cent with special safety consideration and installation criteria as needed.***

D'autre part, le règlement ne prévoit pas d'autres règles applicables dans des milieux sensibles. Toutefois, selon l'article 3701-29-14, les autorités peuvent adopter des normes particulières supplémentaires, notamment sur le contrôle de l'azote.

> ***3701-29-14 Effluent quality standards.***
>
> ***Technologies must meet the following performance based effluent quality standards as applicable to be considered for approval by the director for reductions in soil absorption area sizing, soil depth credits, nutrient reduction, or***

reduction of high strength waste before distribution to a soil absorption component:

[...]

(C) Nutrient reduction standards for pretreatment components may be established by the director or board of health when there is a significant risk of nutrient contamination to surface or ground water due to risk factors identified in the site review or other types of water quality assessments, or risk due to proximity to local, state, or federally recognized nutrient sensitive environments.

(1) When total nitrogen reduction is required, pretreatment components that meet a fifty per cent reduction in the total nitrogen concentration (average influent and effluent total nitrogen concentrations and the actual percentage of removal are provided) as demonstrated by ANSI/NSF Standard 245, BNQ Standard NQ 3680-910, CEN Standard EN 12566-3 data or equivalent shall be used.

(2) Other nutrients standards may be established by the director or board of health as needed for an area including higher nitrogen reduction or other nutrients.

8.12 TOILETTES : Toilettes à compost, toilettes chimiques et toilettes à incinération

Le règlement n'encadre pas les toilettes chimiques mais prévoit des dispositions relatives aux toilettes à compost et à incinération. Celles-ci doivent répondre au standard NSF approprié. Dans le cas de leur utilisation, une réduction du débit journalier du bâtiment peut être appliqué four fin de conception sur démonstration jugée satisfaisante de la diminution des volumes et charges.

> ***3701-29-17 Gray water recycling systems and alternative toilets.***
>
> ***(H) Composting and incinerating toilets are STS components and may be used for the disposal and treatment of toilet waste including human excreta and urine.***
>
> ***(I) A STS that uses composting or incinerating toilets for disposal and treatment of toilet waste must discharge all other sewage from the dwelling or building including but not limited to water from kitchen sinks, dishwashers, clothes washing, bathing or showering, bathroom or laundry sinks to a STS.***
>
> ***(J) A STS using composting or incinerating toilets for disposal and treatment of all toilet waste in the dwelling may reduce the daily design flow to the STS by up to twenty-five per cent as determined by the designer, homeowner and the board of health.***
>
> ***(K) Composting toilets used as part of a STS must be certified to ANSI/NSF Standard 41 and are authorized for use. A manufacturer of a composting toilet that is not certified to ANSI/NSF Standard 41 who seeks approval for use in the state must submit an application in accordance with the requirements of section 3718.04 of the Revised Code and obtain approval for use from the director of health.***
>
> ***(L) Incinerating toilets used as part of a STS must be certified to NSF Protocol P157 and are authorized for use. A manufacturer of a incinerating toilet that is not certified to NSF Protocol P157 who seeks approval for use in the state must submit an application in accordance with the requirements of section 3718.04 of the Revised Code and obtain approval for use from the director of health. Electrical connections for incinerating toilets must comply with the requirements of the national electric code.***
>
> ***(M) All plumbing connecting a composting or incinerating toilet to the building sewer must comply with the Ohio plumbing code or applicable local building codes and requirements.***
>
> ***(N) Composting or incinerating toilets authorized for use under paragraph (K) or (L) of this rule shall be installed and vented in accordance with the manufacturer's specifications or as authorized by the director's approval.***
>
> ***(O) Liquid and solid materials removed from a composting toilet shall be disposed of as septage in accordance with rule 3701-29-20 of the Administrative Code. Dry***

> ***incinerated waste material from an incinerating toilet shall be disposed of at a solid waste landfill permitted by Ohio EPA.***

8.13 PERMÉABILITÉ DU SOL :

Le règlement n'établit pas de plage de perméabilité tel que nous connaissons au Québec. La perméabilité ne tient pas compte d'un temps de percolation ni de la conductivité hydraulique du sol. Selon l'article 3701-29-15 et les tableaux 3 et 4, le concept de perméabilité est basé sur le type de sol (texture et structure). À partir de la texture, de la structure du sol et de la qualité de l'eau (DBO5), un taux de charge hydraulique (gpd/ft2) est déterminé. Le tableau ci-dessous illustre les taux de charge hydraulique pour les différents types de sol.

Table 3. Soil Infiltration Loading Rates

Soil Characteristics			Soil Infiltration Loading Rate (gpd/ft²)		
Texture	Structure		$CBOD_5$		
	Shape	Grade	>25mg/L (septic tank effluent)	≤25mg/L (Pretreated effluent)	Row
COS, S, LCOS, LS	--	0SG	0.8	1.6	1
FS, VFS, LFS, LVFS	--	0SG	0.4	1	2
CSL, SL	--	0M	0.2	0.6	3
	PL	1	0.2	0.5	4
		2, 3	0	0	5
	PR/BK/GR	1	0.4	0.7	6
		2, 3	0.6	1	7
FSL, VFSL	--	0M	0.2	0.5	8
	PL	1, 2, 3	0	0	9
	PR/BK/GR	1	0.2	0.6	10
		2, 3	0.4	0.8	11
L	--	0M	0.2	0.5	12
	PL	1, 2, 3	0	0	13
	PR/BK/GR	1	0.4	0.6	14
		2, 3	0.6	0.8	15
SIL	--	0M	0	0.2	16
	PL	1, 2, 3	0	0	17
	PR/BK/GR	1	0.4	0.6	18
		2, 3	0.6	0.8	19
SCL, CL, SICL	--	0M	0	0	20
	PL	1, 2, 3	0	0	21
	PR/BK/GR	1	0.2	0.3	22
		2, 3	0.4	0.6	23
SC, C, SIC	--	0M	0	0	24
	PL	1, 2, 3	0	0	25
	PR/BK/GR	1	0	0	26
		2, 3	0.2	0.3	27

Tel que démontré au tableau précédent, un taux de charge hydraulique est prévu pour certains types de sols argileux. Ces mêmes types de sols seraient considérés comme étant imperméable

dans le cadre d'application du RETEURI. L'élément de perméabilité du sol n'est donc pas une contrainte absolue à la mise en place d'un système de traitement par infiltration dans le sol. Ceci-dit, dans une situation ou le sol du terrain récepteur est imperméable, le règlement prévoit diverses adaptations de conception (article 3701-29-15, (N)). Les adaptations sont : un rehaussement, un surdimensionnement, une alimentation adéquate de la surface, un drainage périphérique de la zone, etc.

> ***3701-29-15 General soil absorption standards.***
>
> ***(N) The soil absorption component area shall be of adequate size and configuration to disperse the effluent and prevent public health nuisance conditions. When determining the size and configuration of the soil absorption component area the following minimum requirements shall be met: [...]***
>
> ***(2) The HLLR shall be used to determine the minimum required length of the soil absorption component or basal area parallel to surface contours and shall be based on soil characteristics, land slope, site conditions, infiltrative distance, and the nature and depth to limiting conditions.***
>
> ***(d) Adjustments to the HLLR for designs shall be considered by the designer and may be required by the board of health based on the following site conditions: [...]***
>
> ***(i) Where the infiltrative distance is less than eight inches, the HLLR may be decreased to reduce the risk of flooding of the trench bottoms, seepage at the toe of mounds or saturating the soil around drip tubing. Designs shall also consider decreasing the HLLR where the flow restrictive layer, seasonal water table or infiltrative surface is less than eight inches below the original ground surface to reduce the risk of inadequate dispersal of sewage and surfacing of effluent; or [...]***

Le règlement encadre aussi l'utilisation de matériel d'emprunt (article 3701-29-15, (O)).

> ***3701-29-15 General soil absorption standards.***
>
> ***(O) General requirements for designing a STS soil absorption component are as follows:***
>
> ***(5) Site modification that requires the use of fill material either for soil absorption or between soil absorption components shall follow manufacturer's specifications as applicable and shall comply with the following:***
>
> ***(a) When the trench depth design results in the distribution product or media extending above natural grade of the in situ soil, fill material placed between the trenches after installation of the distribution media shall be of silt loam, loam, sand, loamy sand or sandy loam texture. Fill material shall be applied in a manner***

> ***that protects and creates an interface with the underlying in situ soil and prevents compaction of material between trenches;***
>
> ***(b) Fill material applied to the natural ground surface prior to the excavation of leaching trenches for the purpose of creating trench sidewall shall be sand, loamy sand, or sandy loam texture soil capable of maintaining trench sidewall stability during installation and shall be applied in a manner that both protects and creates an interface with the underlying in situ soil; and***
>
> ***(c) Unless evaluated as suitable, fill material shall not be present in the vertical separation distance below the infiltrative surface of soil absorption components. Careful consideration shall be given prior to siting soil absorption components in settled non-compacted fill material including but not limited to strip mine spoils to determine the development of pedogenic features and its suitability for soil absorption. Over time, fill material may develop the characteristics of soil; however, it shall be thoroughly evaluated for such characteristics, in addition to treatment and dispersal capacities;***

Bien que les documents consultés ne l'indiquent pas explicitement, la priorité dans le choix d'un mode de traitement est vraiment donnée aux systèmes de traitement des eaux usées par procédé d'infiltration dans le sol. D'ailleurs, la somme des dispositions ci-haut permettent, selon notre compréhension, de reléguer l'utilisation de système de traitement avec autres rejets (cours d'eau ou fossé) à des cas exceptionnels.

En ce qui concerne les fosses de rétention « holding tanks », le règlement prévoit que cette solution est possible comme solution temporaire uniquement. De plus, elles sont régies par les mêmes marges de recul que les autres systèmes (article 3701-29-18).

> ***3701-29-18 Privies, holding tanks, and portable toilets.***
>
> ***(C) A holding tank permitted as a HSTS shall meet the following specifications when a variance has been granted by the board of health:***
>
> ***(1) For temporary abatement of a public health nuisance for an existing system;***
>
> ***(2) The site with the holding tank shall be placed into an O&M monitoring program;***
>
> ***[...]***
>
> ***(4) A holding tank shall be located to meet the isolation distance requirements of the rules and shall be easily accessible for frequent pumping;***
>
> ***[...]***

(6) On a temporary basis during inclement weather and/or during the non-installation season when the property owner must take occupancy until soil conditions are suitable for complete system installation.

8.14 FORTES CONTRAINTES : Solutions pour les sites à fortes contraintes

Le règlement propose une série de normes contraignantes. Bien entendu dans certaines situations existantes ou projetées (zone inondable, bande riveraine, faible épaisseur de sol, etc.) il est impossible des respecter les normes générales sans compromettre la réalisation d'un projet. Dans de tels cas, le règlement ne propose pas de système particulier. Toutefois, différentes possibilités de dérogation ou d'assouplissement sont prévues.

Tout d'abord, le règlement permet un assouplissement des normes d'épaisseur de sol naturel « vertical separation distance ». Cet assouplissement « soil depth credits » tient compte de la conception du système, notamment en fonction du niveau de prétraitement, de l'épaisseur de sable filtrant ajouté, du système de distribution utilisé, etc.

> ***"Soil depth credit" means the use of the design mechanisms of elevation, pretreatment, and/or distribution as substitutes for all or a portion of the required in situ soil treatment to compensate for insufficient vertical separation distance within the infiltrative distance.***

> ***3701-29-14 Effluent quality standards.***
>
> ***(B) Standards that use the soil depth credits or other applicable provisions of rule 3701-29-15 of the Administrative Code require that effluent meet the geometric mean plus two standard deviations of the mean of:***
>
> ***(1) Less than or equal to ten thousand fecal coliform CFU per one hundred milliliters or 5150 E. coli CFU per one hundred milliliters allows for a twelve inch soil depth credit;***
>
> ***(2) Less than or equal to one thousand fecal coliform CFU per one hundred milliliter or 515 E. coli CFU per one hundred milliliters allows for a twenty four inch soil depth credit;***
>
> ***(3) Less than or equal to two hundred fecal coliform CFU per one hundred milliliters or 103 E. coli CFU per one hundred milliliters required for restricted surface application; or***
>
> ***(4) Less than or equal to twenty fecal coliform CFU per one hundred milliliters or 10 E. coli CFU per one hundred milliliters required for unrestricted surface application.***

L'article 3701-29-06 du règlement permet, aussi, la possibilité de rejeter en surface (cours d'eu ou fossé) des eaux usées préalablement traitées. Il s'agit d'une solution de derniers recours pour les bâtiments existants. Ce processus implique d'obtenir un permis spécifique (NPDES) de l'État « Ohio EPA Division of Surface Water) ».

> ***3701-29-06 General provisions and prohibitions.***
>
> ***(F) A STS shall use soil absorption as the means for final treatment and/or dispersal, except for HSTS when the soil absorption component cannot meet the requirements of this chapter and the following conditions and limitations are met:***
>
> ***(1) Soil absorption is required for all STS permitted for use in any new lot or new subdivision created after January 1, 2007.***
>
> ***(2) When soil absorption for a system is not feasible in accordance with this chapter for a replacement HSTS for an existing dwelling or a new HSTS for an existing lot, a discharging HSTS shall only be permitted by the board of health in compliance with NPDES requirements.***
>
> ***(3) New or existing soil absorption components may be used to receive a portion of the effluent from a discharging HSTS that has received coverage under the Ohio EPA household general NPDES permit provided the quality of the discharged effluent is maintained and the HSTS design does not compromise director of health approvals in compliance with rule 3701-29-13 of the Administrative Code.***

Finalement, le règlement inclut un processus de dérogation pour les situations incompatibles à l'application du règlement.

> ***3701-29-22 Variances and more stringent standards.***
>
> ***(A) A board of health may grant a variance from the requirements of this chapter when a person has made written application for a variance to the board requesting the variance from a specified rule or rules and the applicant shows that because of practical difficulties, or other special conditions, compliance with this chapter will cause unusual and unnecessary hardship. The board of health shall not grant a variance that would defeat the spirit and general intent of this chapter or is otherwise contrary to the public interest, adversely affect the public health, cause contamination of the environment, or not comply with the requirements of Chapter 3718. of the Revised Code. A board of health shall maintain a list of all variances to this chapter and shall provide the name and address of the person granted a variance, the reason for granting the variance, and a copy of the variance request to the department of health by the first day of April each year.***
>
> ***(B) Experimental systems may be permitted by the board of health under the provisions of paragraph (A) of this rule provided the director of health concurs in writing with the design, evaluation, and operation and maintenance plan.***
>
> ***[...]***

8.15 ÉTUDES : Études préalables et mise aux normes

Le processus d'émission des permis ou des autorisations est décrit à l'article 3701-29-09 du règlement. Les documents nécessaires sont indiqués au point (A) de cet article. De plus, selon le libellé de cet article, nous comprenons que les autorités locales doivent effectuer une contre vérification sur le terrain des éléments de caractérisation du site.

> ***3701-29-09 Site review and permits for STS installation and operation.***
>
> ***(A) Prior to accepting an application for a permit to install a new or replacement STS or alter an existing STS, the board of health shall require a site review.***
>
> ***(1) A site review shall include:***
>
> ***(a) The completed application and associated fee(s);***
>
> ***(b) A soil evaluation completed in accordance with rule 3701-29-07 of the Administrative Code. The board of health may waive the requirement for a soil evaluation based on small lot size, for an alteration, or for an incremental repair plan;***
>
> ***(c) A STS design completed in accordance with rule 3701-29-10 of the Administrative Code; and***
>
> ***(d) When the applicant is requesting approval of a system subject to paragraph (C) of this rule, an incremental replacement plan shall be submitted with the site review request.***
>
> ***(2) The board of health shall review the application information and conduct an on-site evaluation to determine whether the proposed STS design is in compliance with this chapter. When the board of health determines that a proposed STS is subject to the NPDES or UIC requirements of rule 3701-29-06 of the Administrative Code, the board of health shall determine compliance with NPDES or UIC requirements prior to issuing a permit in accordance with paragraph (B) of this rule.***

L'étude de caractérisation du sol doit être réalisée selon les dispositions de l'article 3701-29-07 « Soil evaluation and soil evaluators ». Le contenu intégral de cet article est reproduit en annexe du présent chapitre.

Par ailleurs, la conception des systèmes est considérée de manière distincte de la caractérisation du sol. L'article 3701-29-10 contient des informations intéressantes sur les concepteurs et la conception « STS Designers and Designs ». L'article est reproduit intégralement aux pages suivantes.

3701-29-10 STS Designers and Designs

(A) STS designs shall be prepared and submitted by persons capable of reviewing the soil evaluation, site conditions, information provided by the homeowner, and these rules to facilitate the choice of an appropriate, site specific STS and complete the STS design in compliance with paragraph (B) of this rule. Designers shall be knowledgeable of the requirements of this chapter and obtain education as necessary or required by manufacturer for all STS technologies they intend to design. Designers may complete the STS design while acting either as an agent of a board of health, or as an independent agent of the homeowner. Any board of health that employs staff qualified to prepare STS designs and offers this service may adopt a fee for the preparation of the design and all associated costs, provided the fee complies with the cost methodology required in rule 3701-36-14 of the Administrative Code.

(B) For the purposes of this chapter, STS designers shall demonstrate the ability to perform the following tasks required for STS designs through the submission of complete and accurate designs to the board of health:

(1) Estimate STS flows including, daily design flows, and any expected variations and estimate pollutant concentrations and mass loads exceeding typical residential sewage strength as defined in paragraph (C) of rule 3701-29-11 of the Administrative Code.

(2) Interpret and evaluate all site specific information including the soil evaluation, site conditions, site prohibitions and information provided by the owner to determine feasible STS options that will meet the requirements of this chapter.

(3) Evaluate site hydraulics and understand how the proposed STS integrates with the site topography and grade to site the STS.

(4) Select devices and components capable of meeting performance requirements based on knowledge of these rules and STS technologies approved by the director of health;

(5) Provide approximate installation and operation costs of feasible STS options to assist the owner in selection of the STS to design.

(6) Prepare a detailed design including all items outlined in paragraph (C) of this rule which fully complies with this chapter.

(7) Delineate by staking or flagging the proposed soil absorption areas on the site as they relate to topography and contour.

(8) Be available to clarify any questions with and make adjustments to the system design, layout, or operational concerns. It may be necessary for the designer to

meet with the owner, soil scientist, installer, service provider, or local health department during, prior, and after the installation.

(C) The designer or designee shall visit the site where the STS is to be located during the design process. The proposed location of a soil absorption component shall be staked or flagged on site to facilitate protection by the owner or his agent and to demonstrate that it can be installed as designed. Documentation submitted to the board of health shall be legible and contain sufficient detail to demonstrate compliance with the provisions of this chapter. At a minimum the STS design shall include:

(1) A description of the dwelling and/or structure(s) to be served by the STS;

(2) Details on daily design flow, soil loading rates based on soil evaluation, length along contour, absorption area dimensions, and if needed, pump selection/sizing, and pressure distribution network information;

(3) Rationale if varying from standards for items such as design flow, waste strength, or length along contour;

(4) Identification and a description of all materials and system devices and components including septic tanks, dosing tanks, distribution piping, diversion mechanisms, and distribution materials;

(5) Identification of applicable sizing requirements for all STS devices and components;

(6) If applicable, identification of the approved system manufacturer and model to be used, manufacturer O&M instructions, and means of access for O&M equipment to service the STS;

(7) Construction and installation notes for the system installer including manufacturer installation instructions, if applicable;

(8) Copies of or electronic access to O&M requirements, manuals, and instructions for the owner and service provider;

(9) A legible scaled site drawing on eight and a half inch by eleven inch or larger paper showing the layout of the STS on the site. The drawing shall illustrate:

(a) The proposed location of STS devices and components including the location of the soil absorption component as staked or flagged on site;

(b) The designated area for complete relocation and replacement of the STS as staked on site as required by paragraph (G) of rule 3701-29-06 of the Administrative Code;

(c) The approximate location of all items designated in paragraph (G) of rule 3701-29-06 of the Administrative Code and demonstrate that required isolation distances are met to both the proposed STS and the replacement area;

> ***(d) The location of all surface features that may affect the operation or installation of the STS including, but not limited to, disturbed areas, drainage features, wooded areas, and hardscapes;***
>
> ***(e) The approximate location of soil borings and/or soil test pits; and***
>
> ***(f) North directional arrow;***
>
> ***(10) If necessary or applicable at least one enlarged, detailed plan view drawing of the system. The drawing(s) shall illustrate:***
>
> ***(a) The proposed location and configuration of the system with proposed absorption area dimensions and elevations;***
>
> ***(b) Ground surface elevations and component elevations as necessary to ensure compliance with this chapter; and***
>
> ***(c) Any additional information requested by the board of health;***
>
> ***(11) If applicable, pump selection information including the pump curve and system performance curve;***
>
> ***(12) If applicable, pressure distribution network description and calculations; and***
>
> ***(13) Any additional information required by the board of health.***

Tel que mentionné précédemment, la mise aux normes d'un système existant peut exiger des d'utiliser un processus de dérogation ou une conception différente (niveau de traitement, sable filtrant, etc.). De manière générale, les études nécessaires sont les mêmes que pour un nouveau système.

Parallèlement, la mise aux normes s'applique aussi à la réparation ou la modification d'une installation existante (article 3701-29-02).

> ***3701-29-02 Scope, responsibility for compliance, and applicability of rules.***
>
> ***(D) Chapter 3701-29 of the Administrative Code shall apply to all STS or GWRS installed, altered, or operated after the effective date of this chapter. All STS repairs shall be completed in compliance with this chapter.***

Le règlement n'aborde pas précisément la question d'une augmentation de débit ou du changement de vocation d'un bâtiment. Néanmoins, nous comprenons que les systèmes doivent tenir compte de telles modifications.

8.16 AUTRES :

Éléments du Q-2, r.22 qui sont couverts par le territoire visé

Définitions	X
Hiérarchie du choix d'un système	
Obligation de vidange des fosses septiques	
Méthodes pour établir la perméabilité du sol	
Plages de perméabilité	
Référence aux normes BNQ/NSF	X
Normes de construction des fosses construites sur place	X
Préfiltre	X
Norme spécifique au déboisement (élément épurateur classique)	
Conduite d'amenée, raccordements et ventilation	X
Champ d'application du Règlement/type d'eau	X
Prohibition de rejeter des eaux usées	X
Interdiction d'utiliser certains produits (désinfection de ces eaux usées)	X
Conditions d'émission des permis (plan, études, etc.)	X
Implication d'un professionnel compétent pour la conception (Ordre professionnels)	X
Désaffectation des systèmes	X
Gestion des boues et des autres résidus	X
Cheminement des eaux et des effluents	
Normes de localisation pour les systèmes étanches et les systèmes non étanches	X
Normes techniques à respecter (matériaux, dimensions, etc.)	X
Conditions d'implantation des systèmes (pente, perméabilité, épaisseur de sol naturel, etc.)	X
Obligation d'entretien et/ou de maintenir un contrat d'entretien des systèmes certifiés	X
Normes de rejet des systèmes	X
Systèmes spécifiquement pour des résidences/bâtiments existants	X
Toilettes à compost	X
Cabinet/toilettes sèches	X
Solutions si ségrégation des eaux (toilettes vs eaux ménagères) (ex : vidange périodique)	X
Déclencheurs/droits acquis pour la mise aux normes de systèmes existants	X
Dispositions encadrant les rejets au fossé/cours d'eau	X
Déphosphatation	
Désinfection	X
Méthodes de prélèvement et d'analyse des rejets des systèmes	X
Définit la responsabilité des municipalités pour l'application du Règlement	X
Amendes/infractions	
Dispositions applicables à des territoires particuliers (Basse-Côte-Nord Iles-de-la-Madeleine, etc.)	

Éléments couverts par le territoire visé et qui ne sont pas traités dans le Q-2, r.22

- Pouvoir des autorités locales de réglementer de façon plus sévère
- Utilisation de matériel de remblai
- Modalités de dérogation
- Modalités de drainage d'un site
- Mesures de subdivision de nouveaux développements
- Alimentation par temps de dosage
- Infiltration avec assouplissement des eaux désinfectées
- Normes sur la réutilisation des eaux grises

ANNEXES Ohio :

3701-29-07 Soil evaluation and soil evaluators.

(A) Soil evaluators shall have the knowledge and experience to facilitate the review of site and soil conditions, information provided by the homeowner, and these rules to identify appropriate areas for the siting of STS or GWRS. Soil evaluators shall be knowledgeable of the requirements of this chapter, available STS technologies, and the science of pedology. Soil evaluations shall be completed by:

(1) A soil scientist or soil classifier certified by the soil science society of America (SSSA) completing the soil evaluation while acting as an independent agent of the owner or board of health;

(2) A SSSA associated professional soil scientist that is supervised by a SSSA certified soil scientist completing the soil evaluation while acting as an independent agent of the owner or board of health;

(3) A soil professional registered by a state or national organization with equivalent minimum qualifications and/or demonstration of competency for soil evaluation as approved by the director of health;

(4) A registered sanitarian employed by the board of health having jurisdiction where the soil evaluation is to take place completing the soil evaluation on behalf of the board of health when the employee is determined by the board of health to be capable of meeting the tasks in paragraph (C) of this rule; or

(5) Other persons approved under a certification program or other training program as approved by the director of health.

(B) Any board of health that completes soil evaluations in compliance with paragraph (A) of this rule may adopt a fee for the cost associated with performing the soil evaluation provided the fee is in compliance with rule 3701-36-14 of the Administrative Code. Nothing shall prevent an owner from securing a soil evaluation from an independent agent in compliance with paragraph (A) of this rule in lieu of a soil evaluation completed by the board of health and the associated fee.

(C) For the purposes of this chapter, soil evaluators shall perform the following tasks required for soil evaluations through submission of complete and accurate soil evaluations:

(1) Describe all limiting conditions within the soil depth investigated as defined in paragraph (III) of rule 3701-29-01 of the Administrative Code;

(2) Use the NRCS field book for describing and sampling soils to describe:

(a) Munsell color table to accurately describe soil color (hue, value, and chroma) and redoximorphic features (concentrations and depletions) to accurately estimate depth to saturated soil;

(b) Describe soil horizons and the depth of each horizon;

(c) Describe the soil texture of each horizon (class, percentage clay, percentage rock fragments);

(d) Describe the structure of each soil horizon (grade, size and shape of structural units);

(e) Describe the moist consistence of the soil for each horizon;

(f) Describe the slope and surface contours as applicable to STS or GWRS designs;

(3) Describe and document the extent of the suitable soil; and

(4) Have sufficient knowledge of this chapter.

(D) The soil evaluator shall visit the site where the STS or GWRS is to be located during the soil evaluation to observe the site conditions and observe and document the soil profile at a sufficient number of locations as determined by the board of health and the soil scientist to accurately reflect the variation in soil and site conditions across the proposed sewage treatment system soil absorption areas, by the use of soil borings and/or excavations of sufficient depth to determine the presence of all limiting conditions but no greater than sixty inches.

(1) The soil evaluator shall document the soil profile using a form prescribed by the department of health for the most representative soil borings and/or excavations and identify the area for which each soil boring and/or excavation is representative.

(2) The location of described soil borings and/or excavations and the representative area for each soil boring and/or excavation shall be staked or flagged on site by the soil evaluator. Staking of representative areas may not be required when they can be identified using natural or in-place markers.

(3) Documentation submitted to the board of health shall be legible and contain sufficient detail to demonstrate compliance with the provisions of this chapter.

(E) At a minimum the soil evaluation shall include:

(1) A site drawing. The site drawing shall be scaled or include sufficient dimensions to identify locations of all soil borings and/or excavations, locations of the representative area for described soil borings and/or excavations and applicable site features as determined by the board of health. The evaluator may use previously prepared or otherwise available drawings such as a survey prepared by a registered professional surveyor, an aerial photograph or digital orthophotograph prepared from a geographical information system, or other similar drawing. The drawing shall include the assessment and documentation of the following:

(a) Any existing dwellings and/or structures and any proposed dwellings and/or structures, if known;

(b) Any site disturbances such as excavated or fill areas, existing driveways and other hardscapes and proposed hardscapes, or related site disturbances, if known;

(c) Location of all private water systems, abandoned wells, or geothermal systems if known, and surface water features on the lot and within fifty feet of the areas identified for possible system installation;

(d) North orientation arrow;

(e) Identification of all soil borings and/or excavations;

(f) Identification and dimensions of spatial areas for which each soil profile description is representative and where the soil has capacity for the treatment and/or dispersal of effluent. The soil evaluation shall include the entire lot or sufficient area to support a primary system and replacement area on the site;

(g) Identification of areas with conditions that would prohibit or impact the siting of a STS or GWRS in accordance with this chapter including, but not limited to: sinkholes, wetland vegetation, bedrock outcrops, areas with a slope greater than twenty five per cent, soils prone to slippage on slopes greater than six per cent, and existing or abandoned drainage tiles, if known; and

(h) Identification of known or observed easements and right-of-ways.

(2) Record of the site and soil characteristics for each soil boring and/or excavation location designated in this paragraph using the nomenclature from the NRCS field book for describing and sampling soils on a form prescribed by the director of health, including but not limited to:

(a) Site descriptions, including but not limited to, landscape position, slope, vegetation, drainage features, rock outcrops, erosion and other natural features;

(b) Detailed soil profile descriptions, including but not limited to, color, texture, grade, shape, structure, consistence, and the depth of each soil horizon or layer including fill or mine spoils where present;

(c) The identification of limiting conditions as defined in paragraph (III) of rule 3701-29-01 of the Administrative Code;

(d) If evident or visible, provide documentation of any relevant surface hydrology, geologic and hydrogeologic risk factors such as bedrock outcrops, sinkholes or karst features on the specific site or in the surrounding area that may indicate vulnerability for surface water and ground water contamination; and

(e) Provide documentation of any geologic risk factors affecting the soil's ability to treat and/or disperse effluent including dense tills and fragipan.

3701-29-19 STS Operation and maintenance management, and system owner education.

(A) The board of health shall develop a program for the administration of O&M management for STS and GWRS and system owner education in compliance with division (A)(7) of section 3718.02 of the Revised Code and this chapter.

(1) O&M management and system owner education is required for all systems installed or altered after the effective date of this chapter.

(2) Boards of health shall work with interested stakeholders to develop a timeline and process for phasing in O&M management for prior installed systems and should consider risk factors such as system age, complexity and risks to public health when establishing the criteria and process for phasing in prior installed systems, except as provided in paragraph (B) of this rule.

(3) All STS that have been issued coverage under the general household NPDES permit after January 1, 2007 shall be included in the O&M management program.

(B) Boards of health that have established a program prior to the effective date of this chapter for the monitoring or assessment of systems, are authorized to continue their program provided that the program allows a person to demonstrate the required maintenance of a system in lieu of a board of health inspection. Monitoring and assessment of STS may also be performed upon request for real estate inspections or as part of locally established real estate transfer programs.

(C) An O&M management program shall include but is not limited to the provisions of this rule and any additional provisions of an O&M management program established by the board of health shall not be considered as more stringent standards subject to division (B) of section 3718.02 of the Revised Code. O&M management programs shall include the following minimum components:

(1) Permit records organized by location providing a history of siting, design, installation, alteration, operation, monitoring, maintenance, and abandonment activities. The results of any O&M monitoring, service contracts, sampling, inspections or reporting required by this chapter shall be maintained in the permit record. All records and information regarding a system's operation and maintenance shall be provided to the board of health within sixty days of any operation and maintenance inspection.

(2) Demonstration of board of health and STS or GWRS owner compliance with operation permit requirements for system types as required in this chapter.

(3) Tracking of activities and requirements associated with the conditions of an operation permit or this chapter, including but not limited to:

(a) Dates and results of any inspections or maintenance service including the inspection required in paragraph (H) of rule 3701-29-09 of the Administrative Code.

(b) Time lines for the expiration and renewal of an operation permit as applicable.

(c) Record of owner compliance with the service contract or other maintenance requirements in accordance with this chapter and the operation permit conditions established in paragraph (I) of rule 3701-29-09 of the Administrative Code;

(d) Record of any related enforcement activities;

(e) Record of any water quality or other samples collected from the system; and

(f) A service provider or board of health may use electronic monitoring and tracking of system operation and maintenance.

(D) O&M in accordance with manufacturer's instructions shall be met when required as a condition of an operation permit, as part of a STS or GWRS product approval, or as otherwise required in this chapter. A person may demonstrate the required O&M of their system in lieu of having a board of health inspection conducted when an inspection is otherwise required. This may include a person securing a service contract or being certified for O&M service by a manufacturer. The board of health shall advise the owner of the ability to demonstrate required O&M through the use of a service contract or owner certification. The owner shall provide proof of servicing and maintenance appropriate to the STS or GWRS to the board of health that includes, but is not limited to:

(1) A copy of the system service report that is signed and dated by a registered service provider or owner who is certified by the manufacturer to service the installed STS or GWRS. Service providers shall notify the board of health when service contracts are not renewed;

(2) Service reports must include minimum information as required by the department for a specific technology or product, the board of health, and the manufacturer as applicable for every component of the system. Service checklists that provide a comprehensive listing of the minimum service requirements shall be used when applicable or available for a product or system type;

(3) Provide a copy of septic tank pumping receipts, tank and distribution box inspections, and cleaning of effluent filters as applicable; and

(4) Any other information that demonstrates maintenance of the system as required by the operation permit.

This shall not preclude the board of health from conducting compliance inspections for the purpose of oversight of installers, service providers or septage haulers nor from requiring payment of an operation permit fee for O&M management.

(E) Owners of HSTS that have obtained coverage under the household general NPDES permit shall comply with the following O&M requirements:

(1) Obtain effluent samples for monitoring as required by the household general NPDES Permit. Effluent samples shall either be collected by the board of health, or if allowed by the board of health, a registered service provider in accordance with protocols established by the department or Ohio EPA. Effluent samples shall be collected in accordance with rule 3701-29-13 of the Administrative Code or as approved by the director from either the installed sampling port or the point of discharge for the STS installation;

(2) Maintenance, repair, servicing or alteration of the system as required to meet the action limits established by Ohio EPA when system effluent quality exceeds the limits established in the household general NPDES permit or more often as necessary to meet the action limits; and

(3) Owners of HSTS that have obtained coverage under the household general NPDES permit, and are not consistently able to meet the effluent quality standards, shall work with the system manufacturer and the board of health to take steps necessary to bring the system into compliance with the established limits, and may include, but is not limited to, the installation of an approved tertiary component or additional approved treatment devices as approved by the department of health, or alteration or limitations on the quantity or quality of sewage discharged into the system.

(F) A board of health may establish a household sewage treatment district in accordance with division (A)(14) of section 3718.02 of the Revised Code and the following minimum criteria and procedures:

(1) A household sewage treatment district established by a board of health shall provide a responsive approach to prevent or resolve sewage treatment problems from HSTS within an established district;

(2) When establishing a household sewage treatment district the board of health shall by formal resolution provide in writing the authority, purpose, scope, and details of the district management program including any fees;

(3) In advance of the adoption of a resolution establishing a household sewage treatment district, the board of health shall provide public notice in a newspaper of general circulation and shall inform all affected homeowners by mail at least ninety days in advance of the adoption of the resolution; and

(4) The board of health may enter into a contract with any entity to administer a household sewage treatment district management program.

(G) The board of health shall promote compliance with this chapter through educational outreach including but not limited to the following:

(1) Providing information to STS owners on the type of STS they own and how it functions, and how to manage, maintain and care for their STS to ensure proper system performance and sustainability.

(2) Help ensure that the STS owner is provided with O&M instructions and service reporting requirements.

(3) Provide information to system owners on how to access the department of health and manufacturer internet sites for O&M instructions as required by division (F) of section 3718.05 of the Revised Code, or upon written request, directly provide a copy of these O&M instructions.

(H) The board of health may provide owners with information on financial assistance resources, and may promote or participate in local and state financial assistance programs to support STS repair and replacement or connection to sanitary sewers and STS abandonment including, but not limited to, the following:

(1) Complete a HSTS management plan to access state revolving loan funds.

(2) Establish a local revolving or low interest loan program.

(3) Encourage targeted community development funding.

SOURCES Ohio:

1. *Ohio Revised Code, Title 37 Healt, Safety, Morals, Chapter 3718 : Sewage Systems*
2. *Ohio Administrative Code, Chapter 3701-29, Sewage Treatment System Rules*
3. *Site internet de Ohio Department of healt, https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/sewage-treatment-systems/INFORMATION-FOR-HOMEOWNERS/*

9.0 PENNSYLVANIE

9.1 ENCADREMENT :

C'est le « Department of Environnemental Protection » qui est responsable de la mise en place du cadre réglementaire pour le traitement des eaux usées des résidences isolées en Pennsylvanie. Le règlement encadrant les aspects techniques est le « DEP Regulations, Title 25, Chapter 73, Standard for onlot sewage treatment facilities ».

Un règlement administratif est aussi appliqué, le « DEP Regulations, Title 25, Chapter 72, Administration of sewage facilities permitting program ». Ce règlement traite plus particulièrement de la procédure de certification des professionnels et du processus d'émission des permis. D'ailleurs l'émission des permis est déléguée aux autorités locales.

Les règlements pertinents sont :

- DEP Regulations, Title 25, Chapter 73, Standard for onlot sewage treatment facilities, adopté en 1983 et amendé pour la dernière fois en 2012, ci-après le règlement.
- DEP Regulations, Title 25, Chapter 72, Administration of sewage facilities permitting program, adopté en 1987 et non modifié depuis, ci-après le règlement administratif.

Le « DEP Regulations, Title 25, Chapter 73, Standard for onlot sewage treatment facilities » traite des systèmes individuels et communautaires. Par exemple, l'article 73.31 du règlement contient des spécifications de dimensionnement des fosses septiques de 0 à 10 000 gallons/jour et plus (jusqu'à 37 854 L). Toutefois, il n'y a pas de plage d'application ni de juridiction clairement définie entre l'État et les autorités locales.

Par contre, les autorités locales sont responsables d'adopter un plan d'intervention pour la protection de l'environnement en vertu de la « Clean Stream Act ». Nous comprenons donc que c'est dans le cadre de l'élaboration de ce plan d'intervention, en collaboration avec l'État, que chaque administration locale détermine la portée de l'encadrement qu'elle prend sous sa juridiction. Selon les documents consultés, notamment divers sites internet, il semble être de pratique courante que la limite de juridiction locale soit fixée à 10 000 gallons/jour (37 854 L/jour). Les projets de plus grande envergure sont laissés sous la juridiction de l'État.

9.2 TYPE D'EAU : Types d'eau visés par l'encadrement

L'article 73.11 du règlement décrit brièvement le type d'eau visée. Toutefois, compte tenu de la très large plage d'application du règlement (10 000 gallons et moins), les types d'eaux usées visées peuvent également être très variées.

> ***GENERAL SITE LOCATION AND ABSORPTION AREA***
>
> ***REQUIREMENTS***
>
> ***§ 73.11. General.***
>
> ***[...]***
>
> ***(c) Liquid wastes, including kitchen and laundry wastes and water softener backwash, shall be discharged to a treatment tank. A sewage system may not discharge untreated or partially treated sewage to the surface of the ground or into the waters of this Commonwealth except as specifically permitted under sections 202 and 207 of the Clean Streams Law (35 P. S. §§ 691.202 and 691.207) and individual residential spray irrigation systems permitted by local agencies under section 7.3 of the act (35 P. S. § 750.7c).***
>
> ***(d) Where additional absorption area is installed to increase the total area of an existing system and flows are generated from a common treatment tank, loading per square foot of the new area and the existing area shall be equal.***
>
> ***(e) Discharge from roof gutters, foundation drainage, floor drains not from sewage generating connections and surface runoff may not be discharged to a treatment tank; nor may the discharges be permitted to flow over an absorption area or spray fields.***
>
> ***(f) The discharge of inadequately disinfected effluent or the discharge of effluent in a manner inconsistent with the system design specifications from an individual residential spray irrigation system shall constitute a nuisance.***

Les eaux à charge organique élevée, comme l'eau provenant d'un établissement de restauration, sont visées par le règlement. Ceci-dit, la conception des systèmes doit tenir compte des contraintes reliées à la nature des eaux devant être traitées. Nous comprenons qu'il en est de même pour tous les types d'usages (atelier de mécanique, salon de coiffure, adoucisseur d'eau, etc.)

> ***§ 73.17. Sewage flows.***
>
> ***[…]***
>
> ***(d) Establishments with food preparation facilities are required to install adequately designed pretreatment units and traps to reduce greases and***

> ***biological oxygen demand (BOD) prior to discharge to an individual or community sewage system.***

Par contre, le règlement prévoit l'exclusion spécifique des eaux de procédés industriels.

> ***Industrial waste—A liquid, gaseous, radioactive, solid or other substance, which is not sewage, resulting from manufacturing or industry or other plant or works and mine drainage, silt, coal mine solids, rock, debris, dirt and clay from coal mines, coal collieries, breakers or other coal processing operations. The term includes substances whether or not generally characterized as waste.***
>
> ***§ 73.17. Sewage flows.***
>
> ***[…]***
>
> ***(b) The sewage flow, which shall exclude any industrial waste, for nonresidential establishments served by an individual or community sewage system shall be determined from the following table: […]***

9.3 DENSITÉ MAXIMALE : Densité maximale des installations septiques

Les documents consultés n'abordent pas cette notion ni celle de l'impact cumulatif des rejets d'eaux usées.

9.4 REJETS : Rejets en surface

Selon le document d'appel d'offres, ce sujet n'a pas à être traité pour ce territoire.

9.5 CONTAMINANTS : Contaminants encadrés

L'article 73.71 du règlement prévoit que les systèmes alternatif/expérimentaux doivent démontrer leur performance relativement à différents polluants caractéristiques des eaux usées. Toutefois, le règlement ne fixe pas de seuil à atteindre. Le règlement réfère plutôt au protocole de certification (ex : NSF40) approprié selon le niveau de traitement recherché.

> ***§ 73.71. Experimental sewage systems.***
>
> ***[…]***
>
> ***(c) The following criteria shall be considered in the design of experimental systems:***
>
> ***(7) The effect upon the groundwater, including:***
>
> ***(i) Fecal coliform.***
>
> ***(ii) Chlorides.***
>
> ***(iii) Nitrates.***
>
> ***(iv) Nutrients.***
>
> ***(v) Other degrading material.***

Dans les situations nécessitant la désinfection des eaux, celle-ci doit utiliser un procédé de chloration et atteindre les seuils suivants.

> ***§ 73.165. Disinfection.***
>
> ***(a) Disinfection of effluent is required prior to spraying. The disinfection shall be by chlorination and shall produce an effluent which will contain a concentration not greater than 200 fecal coliform organisms per 100 milliliters in a single sample. Disinfection units shall be installed in accordance with the manufacturer's specifications. Disinfection units shall be reliable, able to disinfect sewage effluent and be easily maintained by the property owner.***
>
> ***(b) A chlorinator shall be designed to maintain a chlorine residual of 0.2 PPM to 2 PPM and provide for a 30 minute contact time.***

Il n'y a pas de norme de rejet, conséquemment, il n'y a pas de d'exigence de suivi.

9.6 CERTIFICATION : Entité responsable d'effectuer la certification des différents intervenants et des technologies

Les fabricants de systèmes de traitement avancés « Experimental and Alternate Systems » doivent obtenir une certification ou approbation qui relève du « Department of Environmental Protection ». L'État publie une liste des technologies qu'il juge acceptables. L'évaluation repose, entre autres, sur les protocoles NSF appropriés selon le niveau de traitement souhaité. L'entretien des technologies expérimentales ou alternatives est réalisé selon les guides du fabricant approuvés lors du processus de certification.

De plus, selon l'article 72.25 du règlement administratif, les systèmes d'aspersion « spray irrigation system » doivent être entretenus par un tiers qualifié ou autre selon les modalités du « Chapter 72. Administration of sewage facilities permitting program ».

> ***§ 72.25. Issuance of permits.***
>
> ***(h) Prior to the issuance of a permit for an individual residential spray irrigation system, the local agency shall require documentation that the municipality in which the system is to be located, has taken action to assure compliance of the system with § 73.167 (relating to operation and maintenance of individual residential spray irrigation systems) for the life of the system. The assurance shall be established through one or a combination of the following options which have been established or approved in writing by the municipality:***
>
> ***(1) A maintenance agreement between the property owner and an individual, firm or corporation experienced in the operation and maintenance of sewage treatment systems.***
>
> ***(2) A maintenance agreement between the property owner and municipality or its designated local agency which establishes the property owner's responsibility for operating and maintaining the system and the responsibility of the municipality or local agency for oversight of the system.***
>
> ***(3) A municipal ordinance which requires individual residential spray irrigation systems to be operated and maintained through a maintenance agreement between the property owner and an individual, firm or corporation experienced in the operation and maintenance of sewage treatment systems.***
>
> ***(4) Municipal ownership of the system.***
>
> ***(5) Inclusion of the system under a sewage management agency developed in accordance with § 71.73 (relating to sewage management programs for sewage facilities permitted by local agencies) operated by the municipality.***
>
> ***(6) A properly chartered association, trust or other private legal entity which is structured to manage the system.***

> ***(7) Bonding, escrow or other security established prior to the issuance of a permit for an individual residential spray irrigation system and forfeited to the municipality upon notice of continuing noncompliance of the system with the operation and maintenance standards in § 73.167 and monitoring standards in § 72.42(a)(24) (relating to powers and duties of local agencies). The municipality shall use the forfeited security to cover the costs of repair or future operation and maintenance of the system over its design life. The bonding, escrow or other security shall be for an amount up to a maximum of 50% for each of the first 2 years of operation. After 2 years of operation, the bond agreement shall provide for a refund of a portion of the original bond so that only 10% of the cost of equipment and installation is retained by the bondholder. The remaining bond totalling 10% of the cost of equipment and installation shall be maintained for the life of the system.***

D'autre part, l'État exige, selon l'article 72.51 du règlement administratif, que l'émission des permis, relatifs aux installations septiques, relève de personnes qualifiées détenant un certificat de compétence « Sewage Enforcement Officer Certificate ».

> ***§ 72.51. Requirement for certification.***
>
> ***No person may issue a permit for an individual or community onlot sewage system unless that person has been found qualified after examination and has been issued a Sewage Enforcement Officer Certificate by the Certification Board.***

Ce processus de certification est décrit dans l'article suivant.

> ***§ 72.52. Conditions of certification or reinstatement of certification.***
>
> ***(a) The Certification Board shall issue a sewage enforcement officer certificate to a person who meets the following:***
>
> ***(1) Is a natural person or individual. Associations, partnerships or corporate entities are not qualified for certification.***
>
> ***(2) Has passed an applicable examination prepared by the Department.***
>
> ***(3) Has not had his certification revoked previously. After 2 years from a previous revocation, the Certification Board may reexamine and reinstate the certification of a person if that person requests reinstatement. In determining fitness for reinstatement, the Certification Board shall consider the nature and gravity of the misconduct which resulted in the previous revocation and the recommendation of the Department.***

> ***(4) Has not had his certification lapsed due to failure to complete mandatory training during a previous renewal cycle unless the training has been subsequently completed.***

Le règlement défini les personnes aptes à agir à titre de consultant dans le domaine du traitement des eaux usées en Pennsylvanie.

> ***§ 72.1. Definitions.***
>
> ***Qualified registered professional engineer—A person registered to practice engineering in this Commonwealth who has experience in the characterization, classification, mapping and interpretation of soils as they relate to the function of onlot sewage disposal systems.***
>
> ***Qualified registered professional geologist—A person registered to practice geology in this Commonwealth who has experience in the characterization, classification, mapping and interpretation of soils as they relate to the function of onlot sewage disposal systems.***
>
> ***Qualified soil scientist—A person certified as a sewage enforcement officer and who has documented 2 years' experience in the characterization, classification, mapping and interpretation of soils as they relate to the function of onlot sewage disposal systems and either a Bachelor of Science Degree in soils science from an accredited college or university or certification by the American Registry of Certified Professionals in Agronomy, Crops and Soils.***

Il n'y a pas d'autre exigence de certification sur les installateurs/entrepreneurs, ceux qui effectuent le suivi ou l'entretien des systèmes, les conduites, les fosses, etc.

9.7 CAPACITÉ : Capacité des fosses septiques

Le dimensionnement des fosses septiques est précisé à l'article 73.31 du règlement. La capacité effective minimale minimum des fosses septiques « liquid septic tank capacity » est déterminée en fonction du débit de conception du système. L'addition de fosses en série est autorisée pour atteindre la capacité minimale requise.

> ***§ 73.31. Standards for septic tanks.***
>
> ***(a) Capacity.***
>
> ***(1) The minimum liquid septic tank capacity for any installation is 900 gallons.***
>
> ***(2) For single-family dwelling units, not served by a community onlot system, a minimum daily flow of 400 gpd shall be used to determine required septic tank capacity. This figure shall be increased by 100 gallons for each additional bedroom over three. The daily flow indicated provides for use of garbage grinders, automatic washing machines, dishwashers and water softeners.***
>
> ***(3) The minimum septic tank capacity shall be calculated from the following table using estimated sewage flows from paragraph (2), or § 73.17(a)—(c) (relating to sewage flows):***
>
> ***Design flow Tank capacity (gallons per (gallons) day)***
>
> ***0—500 (3.5 x flow exceeding 400 gpd) + (900)***
>
> ***500—5,000 (1.50 x flow exceeding 500 gpd) + (1,250)***
>
> ***5,000—7,500 (1.45 x flow exceeding 5,000 gpd) + (8,000)***
>
> ***7,500—10,000 (1.35 x flow exceeding 7,500 gpd) + (11,625)***
>
> ***over 10,000 (1.50 x the daily flow)***
>
> ***Note: Septic tanks may be connected in series to attain required capacity.***

Selon l'article 73.17, le débit quotidien d'eau usée d'une résidence unifamiliale de 3 chambres à coucher est de 400 gallons/jour, soit 1514 L/jour. De plus, chaque chambre à coucher supplémentaire représente un volume additionnel de 100 gallons/jour, soit 378 L/jour.

9.8 VIDANGE : Encadrement de la vidange des fosses septiques

Le règlement ne prévoit ni la méthode, ni la fréquence de vidange des fosses. Cette notion est laissée à la discrétion des autorités locales. Néanmoins, l'état recommande une vidange au 3 ans ou lorsque l'une des deux couches (écume ou boue) atteint une épaisseur de 1/3 du volume liquide. Par conséquent, aucun programme de suivi de la vidange n'est réglementé par l'État.

9.9 SUIVI : Nécessité de faire le suivi des installations septiques

La seule installation septique qui nécessite un entretien ou un suivi, selon le règlement, est le système d'aspersion « spray irrigation systems ».

> ***§ 73.167. Operation and maintenance.***
>
> ***Individual residential spray irrigation systems require periodic maintenance by the property owner and entity established under § 72.25(h) (relating to permit requirements for operation and maintenance of individual residential spray irrigation systems). […] The system designer shall provide an operation and maintenance manual, which may be supplemented with manufacturer's manuals and instructions, to the permittee that includes, as a minimum, the following required standards for operation and maintenance to be met by the permittee:***
>
> ***(4) A laboratory shall test the discharge to the system for fecal coliforms, carbonaceous biological oxygen demand (CBOD), suspended solids and chlorine residual to determine compliance with Chapter 72 (relating to the administration of sewage facilities permitting program). At least annually, a copy of the tests results along with the most recent inspection of the system by the maintenance entity established under § 72.25(h) shall be sent to the local agency.***

Les systèmes alternatif/expérimentaux sont également soumis à une forme de suivi. Ce suivi est réalisé, non pas dans le cadre d'application du règlement, mais plutôt en vertu des modalités établies dans le cadre de leur certification.

> ***§ 73.72. Alternate sewage systems [...]***
>
> ***(d) An application for an alternative system shall include the following: [...]***
>
> ***(2) A description of the system, device or process; its capabilities; and***
>
> ***scheduled maintenance, <u>if any</u>, which is necessary for continued function.***

Il n'y a pas d'autre obligation (relevé sanitaire, entretien, échantillonnage, etc.) en vertu des documents consultés.

9.10 RESTRICTIONS : Restrictions quant à la localisation des installations septiques

Les normes de localisation sont déterminées pour les composantes étanches (fosse, poste de pompage, etc.), le terrain récepteur d'un dispositif d'infiltration et pour la zone mouillée d'un système d'aspersion « wetted perimeter of the spray field ».

Le règlement prévoit notamment un dégagement par rapport aux piscines, aux aires de circulation ou aux servitudes de passage.

> ***§ 73.13. Minimum horizontal isolation distances***
>
> ***(a) Minimum horizontal isolation distances shown in subsections (b)—(e) shall be maintained between the sewage disposal system and the features itemized except as provided by § 72.33 (relating to well isolation distance exemption). If conditions warrant, greater isolation distances may be required.***
>
> ***(b) The minimum horizontal isolation distances between the features named and treatment tanks, dosing tanks, lift pump tanks, filter tanks and chlorine contact/storage tanks shall comply with the following:***
>
> ***(1) Property line, easement or right-of-way—10 feet.***
>
> ***(2) Occupied buildings, swimming pools and driveways—10 feet.***
>
> ***(3) An individual water supply or water supply system suction line—50 feet.***
>
> ***(4) Water supply line under pressure—10 feet.***
>
> ***(5) Streams, lakes or other surface waters—25 feet.***
>
> ***(6) A cistern used as a water supply—25 feet.***
>
> ***(c) The following minimum horizontal isolation distances shall be maintained between the features named and the perimeter of the aggregate in the absorption area:***
>
> ***(1) Property line, easement or right-of-way—10 feet.***
>
> ***(2) Occupied buildings, swimming pools and driveways—10 feet.***
>
> ***(3) An individual water supply or water supply system suction line—100 feet.***
>
> ***(4) Water supply line under pressure—10 feet.***
>
> ***(5) Streams, water courses, lakes, ponds or other surface water—50 feet (for the purposes of this chapter wetlands are not surface waters).***
>
> ***(6) Other active onlot systems—5 feet.***
>
> ***(7) Surface drainageways—10 feet.***
>
> ***(8) Mine subsidence areas, mine bore holes or sink holes—100 feet.***
>
> ***(9) Rock outcrop or identified shallow pinnacle—10 feet.***

(10) Natural or manmade slope greater than 25%—10 feet.

(11) A cistern used as a water supply—25 feet.

(12) Detention basins, retention basins and stormwater seepage beds—10 feet.

(d) The following minimum horizontal isolation distances shall be maintained between the features named and the wetted perimeter of the spray field:

(1) Property lines, easements or right of ways—25 feet.

(2) Occupied buildings and swimming pools—100 feet.

(3) An individual water supply or water supply suction line—100 feet.

(4) A cistern used as a water supply—25 feet.

(5) Water supply line under pressure—10 feet.

(6) Streams, watercourses, lakes, ponds or other surface waters—50 feet.

For the purposes of this chapter wetlands are not surface waters.

(7) Mine subsidence, boreholes, sinkholes—100 feet.

(8) Roads or driveways—25 feet.

(9) Unoccupied buildings—25 feet.

(10) Rock outcrop—25 feet.

(e) The area within the wetted perimeter of the spray field may not be sited over an unsuitable soil profile.

Il n'y a pas d'autre norme de localisation prévu aux règlements consultés.

9.11 MILIEUX SENSIBLES :

Le règlement contient des dispositions en lien avec les secteurs de pente. Selon l'article 73.12, l'implantation d'installations septiques sur les sites en pente excédant 25% est prohibée. Les pentes excédant 25% sont considérées comme des talus.

> ***§ 73.12. Site location.***
>
> ***(a) A proposed absorption area or spray field having the following characteristics shall be considered unsuitable for the installation of an onlot system or an individual residential spray irrigation system and a permit shall be denied where:***
>
> ***(1) The slope of the proposed absorption area or spray field is greater than 25%.***
>
> ***(2) The area is identified by completed Federal Flood Insurance mapping as a floodway. Where there is no flood mapping, a flood way extends 50 feet from the top of the stream bank as determined by the local agency. This paragraph is not applicable to spray fields.***
>
> ***(3) One or more rock outcrops exist within the proposed absorption area.***
>
> ***(4) In areas underlain by limestone, depressions left by earlier sinkholes exist either in whole or in part within the proposed absorption area or spray field.***
>
> ***(b) Absorption areas or spray fields may not be placed in or on fill unless the fill has remained in place for a minimum of 4 years to allow restoration of natural permeability. The fill shall be composed of clean mineral soil and meet the provisions of § 73.14 (relating to site investigation).***
>
> ***(c) Absorption areas or spray fields shall be sited only in or on undisturbed soils.***

Les milieux boisés ne sont pas spécifiquement considérés dans le choix d'un type d'installation septique à l'exception des « spray fields ». Dans ce cas, la conception du système doit tenir compte du type de couvert végétal.

> ***§ 73.163. Spray fields.***
>
> ***(a) The maximum slope of the undisturbed soil where a spray field may be permitted is 25%.***
>
> ***[...]***
>
> ***(c) Slopes shall be as follows:***
>
> ***(1) Open, grassed areas—limited to 12%.***
>
> ***(2) Forested areas—limited to 25%.***
>
> ***(3) Nonfood producing agricultural areas—limited to 4%***

Il n'y a pas de disposition relative à la protection des plans d'eau (lacs, rivières, milieu humide) autre que les distances d'implantation prévues à l'article 73.13 du règlement. La notion de sensibilité d'un aquifère n'est pas traitée dans les règlements.

9.12 TOILETTES : Toilettes à compost, toilettes chimiques et toilettes à incinération

Le règlement réfère à la norme NSF41 et l'utilisation des toilettes alternatives est encadrée de la façon suivante.

> ***§ 73.64. Chemical toilet or other portable toilet.***
>
> ***(a) When proposed for use at temporary construction sites, facilities providing temporary recreational or sporting activities (such as a special event) or temporary seasonal facilities other than those intended for human habitation, chemical toilets or other portable toilets may be exempt from the onlot permitting requirements of Chapter 72 (relating to administration of sewage facilities permitting program) at the discretion of the local agency but improper installation or maintenance of these toilets shall constitute a nuisance under section 14 of the act (35 P. S. § 750.14) and be enforceable by the local agency.***
>
> ***(b) If multiple chemical toilets or other portable toilets are proposed for temporary use at construction sites, recreational activities or seasonal facilities, all units proposed for installation shall be included under one permit.***
>
> ***[...]***
>
> ***§ 73.65. Recycling toilet, incinerating toilet or composting toilet.***
>
> ***(a) Recycling, incinerating and composting toilets shall bear the seal of the NSF indicating testing and approval by that agency under Standard No. 41.***
>
> ***(b) The device utilized shall meet the installation specifications of the manufacturer and shall be operated and maintained in a manner that will preclude any potential pollution or health hazards.***
>
> ***(c) When the installation of a recycling toilet, incinerating toilet or composting toilet is proposed for a new residence or establishment, an onlot sewage system or other approved method of sewage disposal shall be provided for treatment of washwater or excess liquid from the unit, except as provided in subsection (e). Both sewage disposal facilities shall be included under one permit.***
>
> ***(d) When the installation of a recycling toilet, incinerating toilet, composting toilet or another type of water conservation device is proposed for an existing residence or facility and no alteration of the onlot system is proposed, a permit is not required.***
>
> ***(e) When a composting toilet or incinerating toilet is proposed for installation on a lot meeting the requirements of § 71.63 (relating to retaining tanks), it shall be deemed equivalent to and permitted as a privy. The device shall be operated and maintained in accordance with the manufacturer's specifications. Discharges of liquids from these units, except to onlot sewage systems meeting the***

requirements of this part or other method of sewage disposal approved under this chapter or approved by the Department are prohibited.

9.13 PERMÉABILITÉ DU SOL :

Le règlement ne définit pas de plage de perméabilité. Le concept de perméabilité tient compte d'un temps de percolation illustré au tableau A de l'article 73.16.

Des seuils limites sont établit pour lesquels certains types de systèmes sont prohibés. C'est le cas des sols trop perméables dont le temps de percolation est plus rapide que 3 min/pouce, et pour les sols imperméables à partir de 181 min/pouce, contrairement aux 120 min/pouce rencontrés plus couramment.

Dans ce contexte, le règlement autorise donc des solutions de « subsurface sand filter » et de « elevated sans mounds » dans une partie de la plage de perméabilité considérée comme imperméable au Québec. L'imperméabilité « complète » (plus de 181 minutes par pouce) impose donc plutôt l'utilisation de systèmes à aspersion (spray field) ou le recours à des clauses de dérogation dans le cas de correction d'installations existantes. Le recours à des clauses de dérogation doit fournir le « meilleur encadrement technique possible » lorsque les dispositions du règlement ne peuvent être respectées pour résoudre une situation de pollution.

> ***§ 73.16. Absorption and spray field area requirements.***
>
> ***TABLE A***
>
> ***Minimum Aggregate Absorption Area Requirements for Treatment Tank effluent:***

Average Percolation Rate Expressed as Minute Per Inch	Square Feet of Aggregate Area Per Gallon Per Day	
	All Systems Except Elevated Sand Mounds and Subsurface Sand Filters	Subsurface Sand Filters and Elevated Sand Mounds
Less than 3.0D	Unsuitable	Unsuitable
3 - 5C	Unsuitable	1.50AB
6 - 15C	1.19B	1.50AB
16 - 30C	(Avg. Perc Rate - 15) × (0.040) + 1.19B	1.50AB
31 - 45C	(Avg. Perc Rate - 30) × (0.030) + 1.79B	(Avg. Perc Rate - 30) × (0.026) + 1.50AB
46 - 60C	(Avg. Perc Rate - 45) × (0.028) + 2.24B	(Avg. Perc Rate - 45) × (0.022) + 1.89A
61 - 90C	(Avg. Perc Rate - 60) × (0.023) + 2.66A	(Avg. Perc Rate - 60) × (0.020) + 2.22A
91 - 120ACD	Unsuitable	(Avg. Perc Rate - 90) × (0.017) + 2.82A
121 - 150CD	Unsuitable	((Avg. Perc Rate - 120) × (0.015) + 3.33) (1.05)A
151 - 180CD	Unsuitable	((Avg. Perc Rate - 150) × (0.014) + 3.78) (1.10)A
Greater than 181CD	Unsuitable	Unsuitable

> ***A Pressure dosing required.***
>
> ***B One third reduction may be permitted for use of an aerobic tank.***
>
> ***C May be considered for experimental or alternate proposals.***
>
> ***D Unsuitable for subsurface sand filters.***

Le règlement prévoit des dispositions particulières pour le remplacement d'une installation existante et lorsqu'il n'est pas possible de rencontrer les normes générales. Dans un tel cas une procédure d'exception peut s'appliquer. Selon cette procédure, la construction d'un système avec rejet en surface (cours d'eau ou fossé) est possible ainsi que la mise en place d'une fosse de rétention comme solution de dernier recours.

> ***§ 73.3. Policy.***
>
> ***(b) When considering corrective measures for malfunctioning sewage disposal systems which have been constructed in accordance with this chapter or applicable regulations at the time of construction, the efforts of the local agency or the Department will not be restricted by this chapter. It will be the policy of the Department and local agencies administering this chapter to first consider all individual onlot and community onlot sewage systems described in this chapter, excluding holding tanks, in the correction of existing malfunctions and, when the systems cannot be constructed in accordance with this chapter, to provide the best technical guidance possible in attempting to resolve existing pollution or environmental health problems. When application of best technical guidance results in the absorption area or spray field encroaching on the regulated isolation distance to a well, the proper well abandonment procedure or the relocation of the well should be considered. The requirements of § 72.33 (relating to well distance exemption) may be waived at the discretion of the local agency. This policy will not limit or preclude the use of experimental systems as provided in §§ 73.71 and 73.72 (relating to experimental sewage systems; and alternate sewage systems), small flow treatment systems permitted under the Clean Streams Law or, when no other alternatives are available, holding tanks.***

Compte tenu du libellé de l'article 73.3 ci-haut, nous comprenons que les solutions dans le cas de mauvaises conditions de sol (sol imperméable) sont adaptées au cas par cas. Comme l'article 73.3 vise seulement les installations septiques existantes, la construction d'un nouveau bâtiment avec une nouvelle installation septique doit être réalisée conformément aux normes en vigueur.

Le règlement permet l'utilisation des systèmes à aspersion « spray field » indépendamment de la perméabilité du sol. Les eaux aspergées en surface doivent avoir été préalablement désinfectées et leur traitement final est complété par exposition au soleil, contact de la végétation et

évaporation. L'épaisseur de sol minimale doit tout de même être de 16 pouces avant le roc et de 10 pouces avant la nappe phréatique. Compte tenu du climat Québécois, cette alternative ne nous semble pas très applicable au Québec.

9.14 FORTES CONTRAINTES : Solutions pour les sites à fortes contraintes

Dans une zone inondable, la construction d'un système de traitement par infiltration dans le sol est prohibée (règlement, article 73.12). Les systèmes de type « spray fields » peuvent toutefois bénéficier d'une autorisation spéciale de l'État (règlement, article 73.163).

Il n'y a pas de disposition particulière visant un système d'infiltration qui pourrait être construit dans la bande riveraine (rive et littoral).

Faible épaisseur de sol (- de 30 cm)

Lorsque l'épaisseur de sol est limitée, le règlement permet l'utilisation des systèmes à aspersion « spray fields ». Les eaux aspergées en surface doivent avoir été préalablement désinfectées conformément à l'article 73.165. Ce type de système repose aussi sur un traitement final de l'effluent qui est complété par exposition au soleil, contact de la végétation et évaporation. L'épaisseur de sol minimale doit tout de même être de 16 pouces (40 cm) avant le roc et de 10 pouces (25 cm) avant la nappe phréatique.

> ***§ 73.165. Disinfection.***
>
> ***(a) Disinfection of effluent is required prior to spraying. The disinfection shall be by chlorination and shall produce an effluent which will contain a concentration not greater than 200 fecal coliform organisms per 100 milliliters in a single sample. Disinfection units shall be installed in accordance with the manufacturer's specifications. Disinfection units shall be reliable, able to disinfect sewage effluent and be easily maintained by the property owner.***

Les sites où une couche limitative se trouve à une profondeur de moins de 20 pouces (50 cm) peuvent utiliser une filière de traitement composée d'un système de traitement avancé réduisant la concentration en DBO5 et également de matière en suspensions à des paramètres de moins de 10 mg/l. Les eaux peuvent ensuite être rejetées vers un « shallow limiting zone at-grade » qui consiste essentiellement à un type de champ de polissage hors-sol.

En situation de forte contrainte de site, le règlement prévoit deux alternatives particulières. D'abord, l'article 73.3, mentionné plus haut, propose une procédure de dérogation au cas par cas pour le remplacement des systèmes existants. Deuxièmement, le règlement permet la construction d'un système de traitement par infiltration dans le sol en utilisation un terrain récepteur composé de matériel de remblai (article 73.12). L'utilisation d'un matériel de remblai vieux de plus de 4 ans doit-être une façon simple, peu couteuse et très rependue de palier à des conditions naturelles de site inappropriées. L'article 73.12 est reproduit à la page suivante.

§ 73.12. Site location.

[...]

(b) Absorption areas or spray fields may not be placed in or on fill unless the fill has remained in place for a minimum of 4 years to allow restoration of natural permeability. The fill shall be composed of clean mineral soil and meet the provisions of § 73.14 (relating to site investigation).

9.15 ÉTUDES : Études préalables et mise aux normes

Le règlement prévoit, préalablement à la construction d'une installation, que le terrain récepteur doit avoir fait l'objet d'une étude de caractérisation de site. Le contenu de l'étude nécessaire est déterminé par l'article 73.14 du règlement.

> ***§ 73.14. Site investigation.***
>
> ***(a) Absorption area. Soil tests to determine the presence of a limiting zone and the capacity of the soil to permit the passage of water shall be conducted prior to permit issuance.***
>
> ***(1) On all locations where the installation of an absorption area is proposed, at least one excavation for examination of the soil profile shall be provided.***
>
> ***(2) The depth of the excavation shall be to the top of the limiting zone, or a maximum of 7 feet.***
>
> ***(3) All soil profile excavations shall be conducted within 10 feet of the proposed absorption area. A description of the soil profile shall be recorded on the site investigation and percolation test report form for onlot disposal of sewage issued by the Department.***
>
> ***(4) Where soil has been removed by grading or excavation, the surface of the undisturbed soil shall be considered to be the point from which the depth to limiting zone is measured. Excavatating soil to system installation depth for the purpose of installing the system may not be considered disturbing the soil.***
>
> ***(5) When the examination of the soil profile reveals a limiting zone within 20 inches of the mineral soil surface, percolation tests may not be conducted and a permit will be denied except as provided in § 73.77 (relating to general requirements for bonded disposal systems).***
>
> ***(6) Where examination of the soil profile reveals the absence of a limiting zone within 20 inches of the mineral soil surface, percolation tests shall be performed within the proposed absorption area. The average percolation rate shall be within the range indicated in § 73.16 (relating to absorption area requirements).***
>
> ***(7) The location and depth to the limiting zone of all soil profile excavations and the location of all percolation tests conducted on a lot shall be indicated on the plot plan of the Application for Sewage Disposal System issued by the Department or attached diagram.***
>
> ***(b) Spray field.***
>
> ***(1) Soil tests to determine the presence of a limiting zone shall be conducted prior to permit issuance.***

> ***(2) A minimum of 4 soil profile evaluations shall be evenly spaced within 10 feet of the perimeter of the proposed spray field when the spray field is less than or equal to 20,000 square feet.***
>
> ***(3) Spray fields in excess of 20,000 square feet shall be evaluated by evenly spacing the soil profiles within 10 feet of the perimeter of the proposed spray field at intervals of 100 feet or less.***
>
> ***(4) The soil profile information collected within the proposed spray field area shall be considered in the design and permitting of the system. Additional soils profiles, both on the perimeter or within the proposed spray field, may be required when the sewage enforcement officer identifies trends in the soils profiles or surface features which document variable soils conditions in the area of the proposed spray field. These trends include, but are not limited to, unsuitable soil areas mixed with suitable soils within the proposed site and surface features such as rock outcrops, mine subsidence, boreholes and sinkholes.***
>
> ***(5) Soil profiles shall be evaluated to the depth of bedrock, or rock formation or 40 inches whichever is shallower.***
>
> ***(6) When the examination of the soil profile reveals a limiting zone of a seasonal high water table within 10 inches of the mineral soil surface or a limiting zone as indicated by bedrock or coarse fragments with insufficient fine soil to fill voids that are located within 16 inches of the mineral soil surface, a permit for an individual residential spray irrigation system will be denied.***

Le règlement énonce également la méthodologie pour la réalisation d'essais de percolation (article 73.15). D'autre part, l'article 72.30 du règlement administratif exige une inspection du système lors des travaux.

> ***§ 72.30. Inspection.***
>
> ***(a) No part of an individual or community onlot sewage system may be covered until a final inspection is conducted and final written approval is given by the local agency.***
>
> ***(b) The sewage system shall be inspected, approved and covered before the structure is occupied by a person.***
>
> ***(c) The applicant shall notify the local agency when the installation of the sewage system is completed and ready for inspection.***
>
> ***(d) The applicant may cover the individual or community onlot sewage system upon receipt of written approval by the local agency. If 72 hours have passed, excepting Sundays and holidays, since the local agency received the notification of completion required by subsection (c), the applicant may cover the sewage***

> ***system unless final written approval to cover has been refused by the local agency.***
>
> ***(e) The local agency may inspect and make tests before, during or after construction and may by order require a sewage system to be uncovered at the expense of the applicant, if the sewage system has been covered contrary to this chapter.***
>
> ***(f) When the inspection reveals that the installation of the sewage system is contrary to the permit application or in violation of the act or this part, the permit shall be revoked and the provisions of §§ 72.28(b) and (c) and 72.29 (relating to revocation of permits; and review of denials and revocations) apply.***

Au-delà de ces éléments, les règlements consultés ne contiennent pas d'autre précision sur la forme et le contenu de l'évaluation du site ou sur les données de conception du système.

Par contre, les responsabilités relatives aux personnes qui sont responsables de l'émission des permis méritent d'être soulignées en raison de leur originalité. Le règlement administratif décrit de manière détaillée une obligation, pour les autorités locales, d'engager une ressource externe qualifiée et indépendante pour faire l'émission des permis (article 72.21).

> ***§ 72.21. General.***
>
> ***(a) A local agency shall employ or contract with at least one sewage enforcement officer and one alternate sewage enforcement officer who have been certified by the Certification Board under Subchapter D (relating to certification of sewage enforcement officers). References to sewage enforcement officer in this part also apply to alternate sewage enforcement officers.***
>
> ***(b) A local agency shall employ an adequate number of sewage enforcement officers or contract with individuals, firms or corporations to adequately perform the services of sewage enforcement officers to administer the applicable provisions of this chapter within the time periods in this chapter and in accordance with this chapter and Chapter 73 (relating to standards for onlot sewage treatment facilities).***
>
> ***(c) No local agency may issue a permit for the installation of an individual or community onlot sewage system except by and through a certified sewage enforcement officer employed or contracted by the local agency.***
>
> ***(d) The local agency by action of its sewage enforcement officer shall issue a permit for an individual or community onlot sewage system when the proposed system is in compliance with the act and this part.***
>
> ***(e) The actions of local agencies include actions of their designated sewage enforcement officers.***

> ***(f) A property owner proposing a bonded disposal system under § 73.77 (relating to bonded disposal systems) shall bear the cost of activities associated with conducting, observing or confirming percolation tests.***

L'article 72.22, précise dans quelles situations il est obligatoire d'obtenir un permis.

> ***§ 72.22. Permit issuance.***
>
> ***(a) No person may install, award a contract for construction or construct an individual or community onlot sewage system, or install, construct, occupy or use a building to be served by that system without first obtaining a permit from the local agency, except as provided in subsections (c)—(e).***
>
> ***(b) A permit shall be required by the local agency for alterations or connections to an existing individual or community onlot sewage system when the alteration or connection requires the repair, replacement or enlargement of a treatment tank or retention tank, or the repair, replacement, disturbance, modification or enlargement of a soil absorption area or spray field, or the soil within or under the soil absorption area or spray field.***
>
> ***(c) Multiple installations of chemical toilets or other portable toilets proposed for temporary use at a construction site, a recreation activity or a temporary facility shall be covered by one permit.***
>
> ***(d) A permit is not required for the installation of a recycling toilet, incinerating toilet, composting toilet or other type of water conservation device where the existing onlot system will not be altered.***
>
> ***(e) Except when a local agency or municipality requires a permit by ordinance, no permit or official plan revision is required for the installation of an individual onlot sewage system for a residential structure occupied or intended to be occupied by the property owner or a member of the property owner's immediate family on a contiguous tract of land 10 acres or more if the owner of the property was the owner of record as of January 10, 1987. For the purposes of this subsection, the term ''immediate family'' means a brother, sister, son, daughter, stepson, stepdaughter, grandson, granddaughter, father or mother of the property owner.***
>
> ***(f) The installation of a permit-exempt system under subsection (e) is not required to be approved by or meet the standards of the Department or local agency under their rules and regulations for the siting, design or installation of onlot sewage systems, except for the siting requirements of subsection (g), unless a permit is required by a regulation or ordinance of a local agency or municipality, or the person qualifying for the permit exemption chooses to not use the permit exemption. A permit exemption may also be granted where a 10 acre parcel or lot is subdivided from a parent tract after January 10, 1987. When one permit exemption has been granted for a lot, tract or parcel under this section, any lot,***

tract or parcel remaining after subdivision of the lot or parcel which received the permit exemption or any lots or parcels subdivided from either lot, tract or parcel in the future will not be eligible for a 10-acre permit exemption and shall meet the planning, permitting, siting and construction standards of the Department relating to onlot sewage systems. Owners of a lot, tract or parcel which otherwise qualified for the permit exemption, who do not choose to use the permit exemption remain exempt from the planning requirements of the act with respect to that lot, tract or parcel.

(g) Owners of property qualifying for a permit exemption under subsections

(e) and (f) shall install permit-exempt systems in accordance with the following siting requirements.

(1) The perimeter of the septic tanks and absorption area shall be located at least 200 feet from the perimeter of any property line, nonutility rightofway, 100-year floodplain or any river, stream, creek, impoundment, well, watercourse, storm sewer, lake, dammed water, pond, spring, ditch, wetland, water supply or any other body of surface water and 10 feet from any utility right-of-way.

(2) Before a person who meets the requirements of subsections (e) and (f) for a permit exempt system installs a system, the person shall notify the local agency of the installation and shall provide documentation relating to the siting requirement of this subsection which is satisfactory to the local agency. The local agency may charge a fee, not to exceed $25, to verify that the system is located in accordance with the siting requirements.

(h) A permit is not required when a new dwelling is proposed to replace a previously existing dwelling when the local agency determines that the size and anticipated use of the new dwelling, as determined under §§ 73.16 and 73.17 (relating to requirements for absorption areas; and sewage flows), are the same as or less than those of the previously existing dwelling and the previously existing dwelling was in use within 1 year of the anticipated date of completion of construction of the new dwelling. This exception does not apply when an active investigation of a malfunction is under way by the local agency or the Department.

9.16 AUTRES :

Éléments du Q-2, r.22 qui sont couverts par le territoire visé

Définitions	X
Hiérarchie du choix d'un système	
Obligation de vidange des fosses septiques	
Méthodes pour établir la perméabilité du sol	X
Plages de perméabilité	X
Référence aux normes BNQ/NSF	X
Normes de construction des fosses construites sur place	X
Préfiltre	X
Norme spécifique au déboisement (élément épurateur classique)	
Conduite d'amenée, raccordements et ventilation	X
Champ d'application du Règlement/type d'eau	X
Prohibition de rejeter des eaux usées	X
Interdiction d'utiliser certains produits (désinfection de ces eaux usées)	
Conditions d'émission des permis (plan, études, etc.)	X
Implication d'un professionnel compétent pour la conception (Ordre professionnels)	X
Désaffectation des systèmes	
Gestion des boues et des autres résidus	
Cheminement des eaux et des effluents	
Normes de localisation pour les systèmes étanches et les systèmes non étanches	X
Normes techniques à respecter (matériaux, dimensions, etc.)	X
Conditions d'implantation des systèmes (pente, perméabilité, épaisseur de sol naturel, etc.)	X
Obligation d'entretien et/ou de maintenir un contrat d'entretien des systèmes certifiés	X
Normes de rejet des systèmes	X
Systèmes spécifiquement pour des résidences/bâtiments existants	X
Toilettes à compost	X
Cabinet/toilettes sèches	X
Solutions si ségrégation des eaux (toilettes vs eaux ménagères) (ex : vidange périodique)	X
Déclencheurs/droits acquis pour la mise aux normes de systèmes existants	
Dispositions encadrant les rejets au fossé/cours d'eau	
Déphosphatation	
Désinfection	X
Méthodes de prélèvement et d'analyse des rejets des systèmes	X
Définit la responsabilité des municipalités pour l'application du Règlement	X
Amendes/infractions	
Dispositions applicables à des territoires particuliers (Basse-Côte-Nord Iles-de-la-Madeleine, etc.)	

Éléments couverts par le territoire visé et qui ne sont pas traités dans le Q-2, r.22

- Encadrement des systèmes de chloration
- Encadrement des systèmes d'aspersion
- Encadrement entourant l'utilisation d'un terrain récepteur constitué de remblai
- Modalité de cautionnement requis dans l'établissement d'un système dans des conditions jugées à risque.
- Certification par l'état des responsables de l'analyse des demandes de permis
- Clauses de dérogation pour terrain de plus de 10 acres
- Clause de dérogation pour rayon de puits supporté par une étude hydro-géologique
- Claude de dérogation pour le replacement d'un système existant

SOURCES Pennsylvanie:

1. *Government of Pennsylvania, Department of Environmental Protection, Regulations, Title 25, Chapter 71. Administration Of Sewage Facilities*
2. *Government of Pennsylvania, Department of Environmental Protection, Regulations, Title 25, Chapter 72. Administration Of Sewage Facilities Permitting Program*
3. *Government of Pennsylvania, Department of Environmental Protection, Regulations, Title 25, Chapter 73. Standards For Onlot Sewage*
4. *Site internet du Gouvernement de la Pennsylvanie, Department of Environmental Protection, https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Act537/OnlotDisposal/Pages/default.aspx*

10.0 VERMONT

10.1 ENCADREMENT :

L'encadrement du traitement et de l'évacuation des eaux usées des résidences et bâtiments isolées est sous la responsabilité d'une agence gouvernementale dans l'État du Vermont. Plus particulièrement l'agence « *Agency of Natural Resources Department of Environmental Conservation Drinking Water and Groundwater Protection Division* » réglemente le domaine des eaux usées dans l'état du Vermont.

Le cadre réglementaire relatif aux installations septiques est déterminé par le « Code of Vermont Rules (CVR 12-033-001), Environnemental Protection Rules Chapter 1, Wastewater System and Potable Water Supply Rules », ci-après le règlement. La dernière mise à jour date du 12 avril 2019. Ce règlement origine d'un ensemble de lois du « Vermont Statutes Title 10 – Conservation and development » telles que les Chapter 47 – Water Pollution Control, Chapter 56 – Public Water Supply, Chapter 64 – Potable Water Supply and Wastewater System Permit, toutes mises à jour en 2019.

L'application du règlement est confiée à un fonctionnaire de l'agence qui peut la déléguer sur demande à une municipalité.

> ***Secretary – means the Secretary of the Agency or a duly authorized representative of the Secretary. A duly authorized representative of the Secretary includes a municipality that has received delegation to implement provisions of these Rules in lieu of the Secretary pursuant to Subchapter 6.***

> ***Subchapter 6 – Delegation***
>
> ***§ 1-601 Full or Partial Delegation***
>
> ***(a) A municipality may request that it be delegated the authority to implement the provisions of 10 V.S.A., Chapter 64, except §§ 1975, 1976 and 1978, in lieu of the Agency, through administration of the permitting program set forth in these Rules for all types of wastewater systems and potable water supplies located within the municipality. This is called full delegation.***

Toutefois, le règlement exige que cette délégation de pouvoirs, à une municipalité, requière que celle-ci confie l'étude des dossiers à un professionnel qualifié dans le domaine du traitement des eaux usées.

> ***§ 1-603 Performance Expectations for a Delegated Municipality***

> ***Municipalities receiving delegation under this Subchapter shall:***
>
> ***(1) Administer the program in conformance with these Rules and with the procedures and practices adopted by the Secretary that interpret these Rules.***
>
> ***(2) If receiving full delegation, employ a designer to review applications and issue permits pursuant to these Rules.***
>
> ***(3) If receiving partial delegation, employ a designer or employ a professional engineer practicing within the scope of their engineering specialty to review applications and issue permits pursuant to these Rules.***

L'encadrement prévoit des dispositions régissant les débits journaliers de moins de 560 gallons par jour (2119 L/jour) et ceux de 560 (2119 L/jour) à 6500 gallons par jour (24 605 L/jour).

Par définition, le règlement vise les eaux usées de nature domestique sans égard du type de bâtiment. Au sens du règlement, les eaux usées incluent aussi des eaux à charges élevées tel que celles des restaurants.

> ***Wastewater – means sanitary waste or used water from any building or structure or campground, including, but not limited to, carriage water, toilet water, shower and wash water, food processing wastewater, and process wastewater. Wastewater does not include stormwater.***

Le processus de demande de permis peut ainsi inclure, à la discrétion du fonctionnaire, les conditions jugées nécessaires à la caractérisation adéquate des eaux en présence.

> ***§ 1-309 Permit Conditions***
>
> ***(a) The Secretary may include any condition in a permit that he or she deems necessary to protect human health and the environment or to otherwise satisfy the purposes and requirements of these Rules, including requirements addressing operation and maintenance of a wastewater system or potable water supply.***
>
> ***(b) A permit for a wastewater system may be conditioned on the completion of a groundwater sampling, effluent sampling, water metering, and water quality sampling program when the Secretary determines a program is necessary to detect potential contamination and degradation of groundwater or surface water.***

10.2 TYPE D'EAU : Types d'eau visés par l'encadrement

L'encadrement prévoit des dispositions régissant les débits journaliers de moins de 560 gallons par jour (2119 L/jour) et ceux de 560 (2119 L/jour) à 6500 gallons par jour (24 605 L/jour).

Par définition, le règlement vise les eaux usées de nature domestique sans égard du type de bâtiment. Au sens du règlement, les eaux usées incluent aussi des eaux à charges élevées tel que celles des restaurants.

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>
> ***(b) A permit for a wastewater system may be conditioned on the completion of a groundwater sampling, effluent sampling, water metering, and water quality sampling program when the Secretary determines a program is necessary to detect potential contamination and degradation of groundwater or surface water.***

Tel que mentionné précédemment, le règlement vise à encadrer les rejets d'eaux usées domestiques ou à charges élevées. Dans certains cas, des adaptations doivent être apportées sur l'installation septique pour tenir compte de la nature des eaux, et ce, indépendamment du type de bâtiment (résidence, salon de coiffure, atelier de mécanique, etc.).

L'article 1-805 du règlement, précise les adaptations qui doivent être apportées pour tenir compte des charges plus élevées.

> ***§ 1-805 Wastewater Strength***
>
> ***(a) A leachfield for which design flow is determined pursuant to § 1-803(f)(2) or (3) or that will dispose of food processing waste, including a leachfield that will serve a building or structure with a use as a brewery, shall comply with the following requirements:***

(1) Septic tank effluent that is low strength may be discharged to the leachfield.

(2) Septic tank effluent that is high strength but treated to reduce the strength to low strength may be discharged to the leachfield after such treatment.

(3) Septic tank effluent that is high strength is prohibited from being discharged to the leachfield unless the leachfield is sized pursuant to Subsection (d).

(b) Wastewater strength of septic tank effluent shall be categorized based on the following standards:

(1) Septic tank effluent is low strength when it meets the following standards:

(A) BOD5 ≤300 mg/L;

(B) TSS ≤150 mg/L; and

(C) Fats, Oil & Grease (FOG) ≤50 mg/L.

(2) Septic tank effluent that exceeds any one of the standards for BOD5, TSS, or FOG specified in Subsection (b)(1) is high strength.

(c) When wastewater strength is determined for septic tank effluent, it shall be determined using one of the following methods:

(1) sampling of BOD5, TSS, and Fats, Oil, & Grease as an 8-hour composite or other sampling method approved by the Secretary;

(2) sampling of BOD5, TSS, and Fats, Oil, & Grease from a wastewater system serving buildings or structures or campground with similar uses as an 8-hour composite or other sampling method approved by the Secretary; or

(3) literature review of BOD5, TSS, and Fats, Oil, & Grease from buildings or structures, or campgrounds with similar uses, using the highest strength value identified for the particular uses.

(d) When a leachfield is proposed to dispose of high strength wastewater and is proposed using a Secretary-assigned design flow based on the submission of water use data and wastewater strength calculations pursuant to § 1-803(f)(3)(A) or § 1-804, the leachfield shall be sized using one of the following formulas in lieu of any formula or method for sizing the particular type of leachfield specified in Subchapter 9 that would otherwise apply:

(1) The formula SQLF = (BOD5 ÷ 300 mg/L) x (DF ÷ AR) where:

(A) SQLF = the minimum required square footage of leachfield in square feet;

(B) DF = the design flow in gallons per day; and

(C) AR = the application rate for the soil in gallons per square foot per day identified in § 1-911.

(2) Another formula proposed by an applicant's designer and accepted by the Secretary.

10.3 DENSITÉ MAXIMALE : Densité maximale des installations septiques

Le règlement ne prévoit pas de disposition particulière qui traite de la densité des installations septiques ni de leur effet cumulatif sur le milieu la santé ou l'environnement.

10.4 REJETS : Rejets en surface

L'État permet l'utilisation de systèmes de traitement des eaux usées avec un rejet en surface. Ce type de système de traitement des eaux usées doit être conforme à un règlement particulier, soit le « Indirect Discharges Rules ».

Une « indirect discharge» est défini par ce règlement comme :

> ***Subchapter 3 - Definitions***
>
> ***§14-300 Definitions***
>
> ***(17) Indirect Discharge means any discharge to groundwater, whether subsurface, land based or otherwise.***

Ce règlement vise des points de rejet dans des cours d'eau, lacs ou étangs mais également dans les eaux souterraines. On en comprend qu'un système susceptible de créer un apport direct à la nappe phréatique est donc également visé par cet encadrement.

Aucune limitation de débit journalier n'est prévue pour l'application de ce règlement.

Ce règlement est basé sur une approche par performance. De plus, ce type de système n'est pas limité seulement à des résidences existantes. Les articles ci-dessous contiennent les critères généraux. Ceux-ci s'appliquent sans distinction aux bâtiments, existants ou projetés. La nuance se situe plutôt dans ce cas-ci dans l'application à un nouveau système avec rejet en opposition à un système avec rejet existant.

> ***Subchapter 3 - Definitions***
>
> ***§14-300 Definitions***
>
> ***(13) Existing Indirect Discharge of Sewage means an indirect discharge of sewage with a design flow of 6,500 gallons per day or more that existed on or before May 17, 1986.***
>
> ***(24) New Indirect Discharge of Sewage means an indirect discharge of sewage which came into existence after May 17, 1986. Existing Indirect Discharges of Sewage that have increased design flows after May 17, 1986 are New Indirect Discharges of Sewage.***

> ***Subchapter 7 - Permitting Criteria***
>
> ***§14-701 Aquatic Permitting Criteria - Applicability***
>
> ***(a) The applicant must demonstrate compliance with the Aquatic Permitting Criteria before a draft permit will be distributed for public comment. The Aquatic Permitting Criteria are numerical permitting limits, which are allowable in-stream***

> ***concentrations for nutrient parameters and other parameters. These numerical limits apply to New Indirect Discharges of Sewage only. If compliance is demonstrated in the stream at the designated stream flow, or in the groundwater, depending on the designated point of compliance, the discharge is presumed to not significantly alter the aquatic biota in the receiving waters.***
>
> ***(b) Aquatic Permitting Criteria nutrient parameters include Total Dissolved Phosphorus and Nitrate nitrogen which, when added to a stream, can cause increased algal growth and changes in the aquatic biota.***
>
> ***(1) Using procedures approved by the Secretary the applicant must demonstrate that the indirect discharge will not increase the in-stream concentration of Total Dissolved Phosphorus at the point of compliance at the designated stream flow by more than 0.001 mg/L above existing background concentration. The applicant shall also demonstrate the indirect discharge will not increase the in-stream Total Phosphorus above any limit established in the Water Quality Standards. These limitations are applicable to upland waters.***
>
> ***(2) For all other streams with a point of compliance in a Waste Management Zone (WMZ) or downstream of a WMZ, the applicant must demonstrate that the indirect discharge will not cause more than a 0.002 mg/L increase in the Total Dissolved Phosphorus concentration above existing background concentration at the designated stream flow. The applicant shall also demonstrate the indirect discharge will not increase the in-stream Total Phosphorus above any limit established in the Water Quality Standards.***
>
> ***(3) For indirect discharges to a lake or pond the applicant must demonstrate that the indirect discharge will not cause more than a 0.001 mg/L increase in the concentration of Total Dissolved Phosphorus in the groundwater downgradient of the system at monitoring locations specified in these Rules.***

D'autre part, selon l'article 14-801 du règlement sur les rejets en surface, les systèmes de traitement avec rejet en surface doivent faire l'objet d'un suivi rigoureux. Les exigences de suivi sont déterminées lors de l'émission du permis.

> ***Subchapter 8 - Compliance Monitoring***
>
> ***§14-801 Monitoring Requirements***
>
> ***(a) Compliance monitoring requirements in indirect discharge permits for New Indirect Discharges of Sewage will generally require sampling and analysis of the effluent, groundwater, and receiving stream with regular reporting to the Secretary. Monitoring for aquatic biota in the receiving stream may also be required. As the design capacity of the indirect discharge increases there will be an increasing number of sampling points and increased frequency of sampling due to a perceived increase in the potential risk of significant alteration of aquatic***

biota as determined by the Secretary. Monitoring of parameters in addition to those contained under the Aquatic Permitting Criteria may be required (e.g. chloride as an indicator of renovated sewage effluent).

(b) By permit condition, the Secretary may require that the permittee collect and submit for analysis duplicate effluent, groundwater, and/or receiving stream samples for the purpose of establishing the precision of the data collected. The indirect discharge permit may also contain provisions for an increase in the frequency of sampling and analysis in the event that effluent limitations or other criteria prescribed in the permit are exceeded.

§14-802 Sampling and Analysis Procedures

(a) All sampling and analysis shall be conducted in accordance with a Quality Control/Quality Assurance Plan submitted by the permittee and approved by the Secretary. All sampling and analysis procedures for testing and monitoring shall be in accordance with the Vermont Water Quality Standards and conducted by a competent laboratory. A competent laboratory is one that has demonstrated successful performance in the analysis of U.S. EPA check samples for all parameters and/or any check samples provided by the Secretary. Permittees may conduct their own analysis or may use independent laboratories. Permittees electing to do their own analysis will be required to demonstrate the

competence of their analysis by annually analyzing samples of known concentrations. On failure of the permittee's laboratory to correctly determine the known concentrations, the permittee will be required to have further analyses done by an independent laboratory.

§14-804 Compliance

(a) An indirect discharge system must be operated and maintained at all times in a manner satisfactory to the Secretary and in compliance with the conditions of the indirect discharge permit, the Vermont Water Quality Standards and the Groundwater Protection Rule and Strategy.

(b) Criteria

The wastewater collection, treatment, storage, and disposal system shall be operated and maintained at all times in a manner satisfactory to the Secretary and shall not cause:

(1) violations of the Vermont Water Quality Standards in the receiving waters;

(2) a health hazard;

(3) nuisance conditions or objectionable odors; and

(4) undue groundwater pollution (that is, significantly greater contamination than that expected and which may have an adverse impact on the receiving waters).

(c) Significant Alteration of Aquatic Biota

A New Indirect Discharge of Sewage shall not cause a significant alteration of the aquatic biota in the receiving waters.

10.5 CONTAMINANTS : Contaminants encadrés

Le règlement traite des contaminants généralement rencontrés dans des eaux usées d'origine domestique (DBO5, MES, huile et graisse, etc.). Tel que mentionné précédemment, le règlement tient compte de la concentration en DBO5 (≤300 mg/l), MES (≤150 mg/l) et huiles et graisses (≤50 mg/l). Ces concentrations sont les seuils limites pour détermination si les eaux sont des eaux à forte charge ou non.

L'échantillonnage de ces paramètres est requis pour l'utilisation d'un système qui est en phase expérimentale mais les modalités (fréquence, méthode) n'en sont pas fixées par règlement. Elles sont plutôt laissées à la discrétion de l'autorité compétente.

> ***§ 1-404 Experimental Approval [...]***
>
> ***(d) The Secretary, as a condition of the wastewater system and potable water supply permit authorizing the installation of an experimental innovative/alternative system or component, shall require the owner of the installed system or component to perform monitoring of the system's or component's operation and submit monitoring reports to the Secretary.***
>
> ***(1) The type and frequency of monitoring shall be the monitoring necessary to demonstrate that the specific approved system or component is functioning as intended.***
>
> ***(2) If the system or component is to treat the wastewater, the condition shall include a requirement to sample the discharge from the system or component and to the submit testing results to demonstrate the system or component is meeting the expected level of treatment.***

La discrétion des autorités compétentes s'étend toutefois de manière très large dans le cadre de l'émission des permis et ceux-ci ont toute l'autorité d'exiger des modalités de suivi extraordinaires s'ils le jugent nécessaire.

> ***§ 1-309 Permit Conditions***
>
> ***(a) The Secretary may include any condition in a permit that he or she deems necessary to protect human health and the environment or to otherwise satisfy the purposes and requirements of these Rules, including requirements addressing operation and maintenance of a wastewater system or potable water supply.***
>
> ***(b) A permit for a wastewater system may be conditioned on the completion of a groundwater sampling, effluent sampling, water metering, and water quality sampling program when the Secretary determines a program is necessary to***

> ***detect potential contamination and degradation of groundwater or surface water.***

Le règlement ne traite pas spécifiquement d'autres contaminants : coliformes fécaux, phosphore, azote. Toutefois, l'article 1-407 fait référence à plusieurs standards internationaux qui tiennent compte, à divers degrés, de seuils de traitement pour de tels contaminants.

> ***§ 1-407 Standards and Protocols for Testing Innovative/Alternative Systems and Components***
>
> ***(a) Bench testing or field testing of innovative/alternative systems or component shall comply with the following standards or protocols:***
>
> ***(1) ANSI/NSF Standard 40 – Residential Wastewater Treatment Systems;***
>
> ***(2) ANSI/NSF Standard 245 – Wastewater Treatment Systems; Nitrogen Reduction;***
>
> ***(3) Canadian BNQ Standard NO 3680-910;***
>
> ***(4) European (EU) Standard EN 12566-3; or***
>
> ***(5) other standards and protocols developed by independent standards organizations and approved by the Secretary.***

10.6 CERTIFICATION : Entité responsable d'effectuer la certification des différents intervenants et des technologies

Les fabricants de différentes composantes utilisées dans la construction d'une installation septique doivent répondre à différents standards. Le règlement fait référence à plusieurs protocoles de certification de plusieurs organismes différents (NSF, BNQ, ASTM, EN, CSA, ANSI, etc.).

Les fabricants de systèmes de traitement avancés (technologies) doivent répondre a l'un ou l'autre des différents standards internationaux applicables afin d'être utilisées dans une filière de traitement.

> ***§ 1-407 Standards and Protocols for Testing Innovative/Alternative Systems and Components***
>
> ***(a) Bench testing or field testing of innovative/alternative systems or component shall comply with the following standards or protocols:***
>
> ***(1) ANSI/NSF Standard 40 – Residential Wastewater Treatment Systems;***
>
> ***(2) ANSI/NSF Standard 24-5 – Wastewater Treatment Systems; Nitrogen Reduction;***
>
> ***(3) Canadian BNQ Standard NO 3680-910;***
>
> ***(4) European (EU) Standard EN 12566-3; or***
>
> ***(5) other standards and protocols developed by independent standards organizations and approved by the Secretary.***
>
> ***(b) Field testing shall be conducted by a testing facility that complies with the following standards or protocols:***
>
> ***(1) EPA/NSF – Protocol for the Verification of Wastewater Treatment Technologies; or***
>
> ***(2) EPA Environmental Technology Verification Program protocol for the Verification of Residential wastewater treatment technologies for nutrient reduction.***

Les installateurs/entrepreneurs ne sont pas soumis à un processus de certification au Vermont. Nos recherches ont toutefois révélé qu'il y a eu des discussions à cet effet au cours des dernières années. Malgré tout, aucune obligation n'est actuellement en vigueur.

Le règlement prévoit différentes catégories de certification des professionnels en sol permettant de poser divers actes réservés en fonction de la classe détenue. Ce système de classification vise également les responsables de l'émission des permis engagés par les autorités locales pour l'application du règlement.

> ***Subchapter 7 – Designer Scope of Authority, Examination, and Continuing Education***
>
> ***§ 1-701 General Requirements***
>
> ***(a) No person, except professional engineers, shall submit a design to the Secretary for a wastewater system or potable water supply without first obtaining a Class A, B, or BW wastewater and potable water supply designer license from the Office of Professional Regulation.***
>
> ***(b) A designer or professional engineer employed to review applications and issue permits pursuant to these Rules by a municipality with delegated authority pursuant to Subchapter 6, and other employees from the designer's or professional engineer's firm or business, shall not complete a design, any part of an application, an installation certificate, or other certification for a wastewater system or potable water supply located, or proposed to be located, within the municipality employing them.***

Le processus de certification des classes de « designer » est fixé par le règlement.

> ***§ 1-706 Examinations***
>
> ***(a) Examinations to become a Class A designer shall consist of both written and field exams prepared and approved by the Secretary that test the individual's knowledge of soil identification and the requirements of these Rules for those wastewater systems and potable water supplies that a Class A designer is authorized by these Rules to design.***
>
> ***(b) Examinations to become a Class B designer shall consist of the Class A examinations and a written exam prepared and approved by the Secretary that tests the individual's knowledge of the requirements of these Rules for those wastewater systems and potable water supplies that a Class B designer is authorized by these Rules to design.***
>
> ***(c) Examinations to become a Class BW designer shall consist of the Class A and Class B examinations and a written exam prepared and approved by the Secretary that tests the individual's knowledge of designing potable water supplies that a Class BW designer is authorized by these Rules to design.***

La nécessité de certification des personnes qui font le suivi des systèmes de traitement n'est pas fixée par règlement mais plutôt à établir par le fonctionnaire désigné lors de la phase d'approbation de systèmes expérimentaux. De façon générale on ne semble toutefois pas parler d'une certification particulière mais plutôt d'une notion de « tiers qualifié » apte à faire les tâches requises.

> ***Subchapter 4 – Approval of Innovative/Alternative Systems and Components***
>
> ***§ 1-401 Purpose and Decisions***
>
> ***(g) Notwithstanding any condition in a permit authorizing the use or inclusion of an innovative/alternative system or component which has an approval requiring inspection of that system or component to be completed by a manufacturer-approved designer, the inspection may be completed by:***
>
> ***(1) a manufacturer-approved service provider; or***
>
> ***(2) if the manufacturer is no longer in business in Vermont:***
>
> ***(A) a designer; or***
>
> ***(B) a person authorized by the Secretary when that person demonstrates knowledge for properly maintaining and repairing the system or component to operate in a manner that meets the manufacturers requirements.***

Enfin, la certification des consultants « designer » se fait par l'office des professions suivant leur champ d'étude.

> ***Subchapter 2 – Definitions***
>
> ***§ 1-201 Definitions***
>
> ***(25) Designer – means a person licensed by the Office of Professional Regulation under 26 V.S.A., Chapter 97 as a wastewater system and potable water supply designer or professional engineers who are Class 1 Designers.***

> ***§ 1-702 Scope of Authority for Class 1 Designers and Professional Engineers***
>
> ***(a) Class 1 Designers are licensed professional engineers who:***
>
> ***(1) are practicing within the scope of his or her engineering specialty; and***
>
> ***(2) if designing soil-based wastewater systems:***
>
> ***(A) received from the Vermont Board of Professional Engineering designation that he or she passed a college-level soil identification course with specific instruction in the areas of soil morphology, genesis, texture, permeability, color, and redoximorphic features; or (B) passed a soil identification exam administered or approved by the Secretary.***

Aucune autre certification relative à un autre aspect du règlement n'apparait nécessaire ou recommandée.

10.7 CAPACITÉ : Capacité des fosses septiques

La capacité minimale des fosses septiques est une capacité effective « Bellow the Bottom of the Outlet ». Le dimensionnement des fosses est fixé en fonction du débit de conception de l'installation septique « design flow ».

À titre d'information, selon l'article 1-803 du règlement, une personne génère 70 gpd d'eau usée, soit 265 L/jour. De plus, au sens du règlement, une résidence de 3 chambres à coucher génère 420 gpd d'eau usée, soit 1589 L/jour. Toujours selon l'article 1-803, lorsqu'il y a plus de 3 chambres à coucher dans une résidence, pour chaque chambre additionnelle un volume supplémentaire de 70 gpd (265 L/jour) doit être ajouté.

> ***§ 1-908 Septic Tanks***
>
> ***(a) A septic tank shall be sized for the minimum capacity established in Table 9-1, except in the following circumstances:***
>
> ***(1) Multiple tanks placed in series provide the minimum tank capacity established in Table 9-1.***
>
> ***(2) The Secretary determines that a smaller tank will retain the wastewater for a minimum of one day prior to discharge, based on information submitted by an applicant's or prospective applicant's designer.***
>
> ***(3) When a pump is installed within the septic tank, the capacity of the tank shall be increased above the capacities in Table 9-1 to provide required capacity for the dose volume and required emergency storage capacity.***
>
> ***(4) The septic tank capacity shall be increased by a minimum of 50 percent above the capacities in Table 9-1 if the building or structure to be served by the wastewater system will include a garbage disposal.***
>
> ***(5) If a pump station discharges wastewater to a septic tank, the capacity of the septic tank shall be increased above the capacities in Table 9-1 to provide adequate retention time to retain settleable solids, and to allow the formation of the scum layer.***
>
> **Table 9-1**
> **Minimum Capacities for Septic Tanks**
>
> | Design Flow, Gallons Per Day | Liquid Capacity Below the Bottom of the Outlet |
> |---|---|
> | 560 or less | 1000 gallons |
> | Greater than 560 – less than 6500 | 2 times design flow |

10.8 VIDANGE : Encadrement de la vidange des fosses septiques

Le règlement aborde très simplement la question de la vidange des fosses septiques (article 1-908).

> ***§ 1-908 Septic Tanks***
>
> ***(c) The septic tank shall be pumped to prevent settleable solids and scum from exiting the tank that may cause a downstream component of the wastewater system to improperly operate.***

Conséquemment, il n'y a pas de disposition sur la fréquence de vidange, une preuve de vidange, le suivi ou le caractère annuel ou saisonnier d'un bâtiment.

10.9 SUIVI : Nécessité de faire le suivi des installations septiques

Les règlements consultés n'exigent pas de réaliser un inventaire ou un relevé sanitaire. Par contre, l'article 1-103 permet, selon notre compréhension, à une municipalité de réaliser un inventaire ou tout autre forme de suivi. Cet article permet, entre autres, d'exiger une inspection de l'installation septique d'une propriété lors d'une transaction immobilière « time of sale inspections ». Cette disposition permet d'assurer un suivi périodique des installations septiques.

> ***§ 1-103 Statewide Uniform Technical Standards***
>
> ***(…)***
>
> ***(b) Municipalities may continue to have ordinances or bylaws that do not establish technical standards, for example, ordinances or bylaws that:***
>
> ***(1) are not specifically regulating potable water supplies or wastewater systems but rather regulating development in general (e.g., setbacks);***
>
> ***(2) require submission to the municipality of copies of plans and documents used to obtain a state permit under these Rules;***
>
> ***(3) require a certificate of occupancy that is based on full compliance with a state permit issued under these Rules;***
>
> ***(4) require notice of, and have the option to observe, any soil testing such as the digging of test pits conducted in support of a permit application;***
>
> ***(5) require notice of, and have the option to observe, construction of a permitted wastewater system or potable water supply;***
>
> ***(6) determine where connections can be made to wastewater treatment facilities and public water systems; and***
>
> ***(7) require time of sale inspections.***

De plus, les municipalités peuvent avoir l'obligation de faire un suivi plus serré des installations septiques sur leur territoire lorsqu'elles reçoivent une délégation d'application partielle ou totale du règlement (article 1-603).

> ***§ 1-603 Performance Expectations for a Delegated Municipality***
>
> ***(...)***
>
> ***(11) Submit an annual report to the Agency by February 15 of each calendar year that lists the number of applications received, the number of permits or denials issued, the number of permits issued that include the use of innovative/alternative systems or components, the number of annual inspections reports received for permits issued that include innovative/alternative systems or components, the average in-house application processing time, and the average***

> ***application processing time from the date of receipt of an administratively complete application to the date of the final decision.***

Le règlement comporte aussi une obligation relative au suivi du niveau de la nappe d'eau souterraine lorsque le projet prévoit de l'abaisser avec une méthode de drainage « curtain drain ».

> ***§ 1-905 Water Table Monitoring***
>
> ***(a) Except for a leachfield designed in a mound using a curtain drain pursuant to § 1-921(c), monitoring of the water table shall be used to establish the seasonal high-water table for a site where a curtain drain is used to lower the seasonal high-water table.***
>
> ***(...)***

Les systèmes de traitement de type filtre à sable classique « Recirculating Sand Filters » nécessitent des interventions de suivi et un programme d'entretien.

> ***§ 1-924 Intermittent and Recirculating Sand Filters***
>
> ***(...)***
>
> ***(3) Monitoring***
>
> ***(A) The sand filter shall be designed for wastewater sample collection before***
>
> ***and after the sand filter.***
>
> ***(B) The sand filter shall have the capability of measuring and recording the wastewater flow from buildings or structures or campgrounds to the sand filter.***
>
> ***(4) Annual inspections of each sand filter by a Class 1, Class B, or Class BW designer are required. A written report shall be submitted to the Secretary within 30 days of the inspection. At a minimum, the following items shall be addressed in the inspection report:***
>
> ***(A) use and age of system including the average daily flows;***
>
> ***(B) the recirculation ratio for recirculating sand filters;***
>
> ***(C) mechanical or electrical malfunctions;***
>
> ***(D) neglect or improper use; and***
>
> ***(E) flushing of the laterals.***
>
> ***(5) Operation & Maintenance Manuals***

> ***(A) A user's manual for the sand filter shall be developed or provided along with record drawing(s) at the time that the sand filter installation is complete. These manuals, at a minimum, shall contain the following information:***
>
> ***(i) diagrams of the components and their location;***
>
> ***(ii) an explanation of how the sand filter functions, operational expectations, and owner responsibility;***
>
> ***(iii) specifications of the electrical and mechanical components installed (occasionally components other than those specified on the plan and detail sheets are used);***
>
> ***(iv) names and telephone numbers of the designer, the local health authority, the supplier/installer, or the management entity to be contacted in the event of a failure;***
>
> ***(v) information on the periodic maintenance requirements of the sand filter, including the septic tank, the dosing and recirculating/mixing tanks, the sand filter unit, the pumps, the switches, the alarms, the leachfield, and other information as appropriate;***
>
> ***(vi) information on "trouble shooting" common operational problems that might occur. This information should be detailed and complete as needed to assist the system owner to make accurate decisions about when and how to attempt corrections of operational problems and when to call for professional assistance;***
>
> ***(vii) information on the disposal of discarded sand filter media in accord with state and local requirements; and (viii) for proprietary sand filter units, a complete operation and maintenance document shall be developed and provided by the manufacturer. This document shall include all the appropriate items mentioned above plus any additional general and sitespecific information useful to the system owner or the service provider.***
>
> ***(...)***

Les fosses de rétention nécessitent aussi des interventions de suivi (article 1-928).

> ***(g) A permit issued for the use of a holding and pump out tank shall require a designer to periodically inspect the tank, visible piping, and alarms and meet the following requirements:***
>
> ***(1) A designer shall submit a written report to the Secretary detailing the results of the inspection and any repairs or changes in operation that are required.***
>
> ***(2) The report shall also detail the pumping history since the previous report, giving the dates of pumping and the volume of wastewater removed.***

> ***(3) The frequency of inspections and reports shall be stated in the permit issued for the use of the tank, but shall be no less frequent than once per year.***
>
> ***(4) Unless permitting a marine holding and pump out tank, the designer shall also inspect the water meter or meters and verify that they are installed, calibrated, and measuring all water that is discharged as wastewater.***
>
> ***(5) Unless permitting a marine holding and pump out tank, the designer shall read the meters and compare the metered flow to the pumping records.***
>
> ***(6) Any significant deviation shall be noted in the report and explained to the extent possible.***

Les articles 1-404 et 1-405 prescrivent des obligations de suivi et d'entretien des systèmes de traitement avancés mais sans détailler de méthode composite ou ponctuelle requise. Les paramètre à échantillonner ne sont pas non plus fixés par règlement mais laissé à la discrétion des autorités responsables de juger du fonctionnement du système selon ses performances attendues.

> ***§ 1-404 Experimental Approval***
>
> ***(d) The Secretary, as a condition of the wastewater system and potable water supply permit authorizing the installation of an experimental innovative/alternative system or component, shall require the owner of the installed system or component to perform monitoring of the system's or component's operation and submit monitoring reports to the Secretary.***
>
> ***(1) The type and frequency of monitoring shall be the monitoring necessary to demonstrate that the specific approved system or component is functioning as intended.***
>
> ***(2) If the system or component is to treat the wastewater, the condition shall include a requirement to sample the discharge from the system or component and to the submit testing results to demonstrate the system or component is meeting the expected level of treatment.***
>
> ***[…]***
>
> ***§ 1-405 Application Process for Innovative/Alternative Systems and Components***
>
> ***An application for approval of the use and inclusion of an innovative/alternative system or component in wastewater system and potable water supply permits shall be submitted on a form prepared by the Secretary. The application form shall require the following information.***
>
> ***(8) Maintenance requirements:***
>
> ***(A) Technical qualifications for service providers.***

> ***(B) Specific actions and their frequency required to maintain the system or component.***
>
> ***(C) Information that will be provided to owner of the system or component regarding maintenance requirements.***
>
> ***(9) Monitoring and analysis requirements:***
>
> ***(A) Proposed schedule for monitoring, including frequency and constituents, if any is proposed.***
>
> ***(B) The method for collection, delivery, and analyses of the effluent from the system or component that meets the requirements of 40 C.F.R. Part 136, unless an alternative method is approved by the Secretary.***
>
> ***(C) Results of the effluent analysis performed by:***
>
> ***(i) a laboratory certified by the NELAC Institute (TNI) to test for the parameters of concern; or***
>
> ***(ii) a laboratory accepted by the Bureau de Normalization du Quebec or the European Committee for Standardization.***

En ce qui concerne l'échantillonnage, cet aspect est traité en détails dans le règlement « Indirect Discharge Rules ». Les articles 14-801 et 14-802 donnent les grandes lignes. Ces dispositions visent seulement les systèmes avec un rejet en surface.

> ***Subchapter 8 - Compliance Monitoring***
>
> ***§14-801 Monitoring Requirements***
>
> ***(a) Compliance monitoring requirements in indirect discharge permits for New Indirect Discharges of Sewage will generally require sampling and analysis of the effluent, groundwater, and receiving stream with regular reporting to the Secretary. Monitoring for aquatic biota in the receiving stream may also be required. As the design capacity of the indirect discharge increases there will be an increasing number of sampling points and increased frequency of sampling due to a perceived increase in the potential risk of significant alteration of aquatic biota as determined by the Secretary. Monitoring of parameters in addition to those contained under the Aquatic Permitting Criteria may be required (e.g. chloride as an indicator of renovated sewage effluent).***
>
> ***(b) By permit condition, the Secretary may require that the permittee collect and submit for analysis duplicate effluent, groundwater, and/or receiving stream samples for the purpose of establishing the precision of the data collected. The indirect discharge permit may also contain provisions for an increase in the frequency of sampling and analysis in the event that effluent limitations or other criteria prescribed in the permit are exceeded.***

> ***§14-802 Sampling and Analysis Procedures***
>
> ***(a) All sampling and analysis shall be conducted in accordance with a Quality Control/Quality Assurance Plan submitted by the permittee and approved by the Secretary. All sampling and analysis procedures for testing and monitoring shall be in accordance with the Vermont Water Quality Standards and conducted by a competent laboratory. A competent laboratory is one that has demonstrated successful performance in the analysis of U.S. EPA check samples for all parameters and/or any check samples provided by the Secretary. Permittees may conduct their own analysis or may use independent laboratories. Permittees electing to do their own analysis will be required to demonstrate the competence of their analysis by annually analyzing samples of known concentrations. On failure of the permittee's laboratory to correctly determine the known concentrations, the permittee will be required to have further analyses done by an independent laboratory.***

Il n'y a pas d'autre disposition sur le suivi des installations septiques.

10.10 RESTRICTIONS : Restrictions quant à la localisation des installations septiques

Le règlement fixe les normes de localisation des systèmes étanches et non étanches au tableau 9.5 du sous chapitre 9. Celui-ci est joint en annexe.

Le règlement inclut toutefois un mécanisme de dérogation pouvant être accordé par le fonctionnaire désigné dans le cas où le contexte nécessiterait une réduction de marge de recul par rapport à un élément réglementé.

> ***§ 1-912 Horizontal Isolation Distances and Isolation Zones for Components of Wastewater Systems [...]***
>
> ***(e) An applicant or prospective applicant may submit a written request to the Secretary for a reduction in the required isolation distance or isolation zone for a particular feature or object.***
>
> ***(1) The Secretary shall authorize the use of a reduced isolation distance or isolation zone for a particular feature or object when the Secretary determines that the isolation distance specified in Table 9-6 or isolation zone identified pursuant to Subsection (c) is unnecessary to protect human health and the environment because the specific site conditions, or the construction techniques and pipe materials, will prevent the potential subsurface flow of effluent from impacting the feature or object and will prevent the performance of the wastewater system from being impacted by the feature or object.***
>
> ***(2) In determining whether to authorize the use of a reduced isolation distance or isolation zone, the Secretary shall consider the following factors:***
>
> ***(A) the ground slope;***
>
> ***(B) groundwater flow;***
>
> ***(C) depth to the seasonal high groundwater and the induced water table;***
>
> ***(D) depth of the impeding soil layer;***
>
> ***(E) soil texture and structure;***
>
> ***(F) travel time for effluent from a component of a wastewater system to reach a feature or object; and***
>
> ***(G) construction techniques or pipe materials that provides equal or greater protection to the wastewater system or feature or object than afforded by the isolation distance or isolation zone.***
>
> ***(3) The Secretary shall not authorize a reduction to the distances used to create an isolation zone around a drinking water source pursuant to Subsection (c) to less than the following:***
>
> ***(A) When there is a continuous impeding soil layer from the leachfield to the source, and it is demonstrated the source is grouted, has no annular space, or soil***

> ***sealed the source casing to prevent contaminant migration along the casing, X and Y shall not be less than 100 feet.***
>
> ***(B) When groundwater flow from beneath the leachfield is not towards a drinking water source, X and Y shall not be less than 100 feet.***
>
> ***(C) When a hydrogeological investigation is completed that reveals that groundwater flow from beneath the leachfield does not flow toward a drinking water source under pumping conditions, X and Y shall not be less than 100 feet.***
>
> ***(D) When a 2-year time of travel management zone is determined, X and Y shall not be less than 50 feet when the drinking water source is grouted.***
>
> ***(E) When a 2-year time of travel management zone is determined, X and Y shall not be less than 100 feet when the drinking water source is not grouted.***
>
> ***(4) The burden shall be on the applicant or prospective applicant to provide information from a designer that addresses the factors in Subsection (e)(2) and enables the Secretary to reach a determination.***
>
> ***(5) The Secretary ' s determination shall be in writing and indicate the reduced isolation distance or isolation zone.***

La lecture des documents n'a pas permis de constater d'autre norme de localisation.

10.11 MILIEUX SENSIBLES :

Les milieux sensibles tels que les lacs, cours d'eau et un aquifère sont protégés par les distances prévues aux tableaux 9-5 et 9-6 du règlement, tel que mentionné au point précédent. Il en est de même pour les arbres. Les boisés et les milieux humides ne sont pas protégés de manière particulière.

Les secteurs de forte pente sont réglementés à l'article 1-903 (d), extrait ci-dessous.

> ***(d) Ground slope requirements for leachfields***
>
> ***(1) The average ground slope of the naturally occurring soil across the entire width and length of the area where an in-ground leachfield is proposed to be constructed, or where the limits of the mound fill material for a leachfield to be constructed in a mound is proposed, or where the infiltrative surface for an atgrade leachfield is proposed to be constructed, shall not exceed 20 percent.***
>
> ***(2) When the design of an in-ground leachfield is less than 10 feet in width or length, the average slope shall not exceed 20 percent in the area measured beginning at the upslope edge of the trench or bed and continuing 10 feet horizontal distance in the downslope direction.***
>
> ***(3) Notwithstanding Subsections (d)(1) and (2), when the lot on which the building or structure or campground to be served by a proposed wastewater system was created before June 14, 2002:***
>
> ***(A) the average ground slope of the naturally occurring soil across the entire width and length of the area where an in-ground leachfield is proposed to be constructed, or where the limits of the mound fill material for a leachfield to be constructed in a mound is proposed, or where the infiltrative surface for an at-grade leachfield is proposed to be constructed, shall not exceed 30 percent; and***
>
> ***(B) when the design of an in-ground leachfield is less than 10 feet in width or length, the average slope shall not exceed 30 percent in the area measured beginning at the upslope edge of the trench or bed and continuing 10 feet horizontal distance in the downslope direction.***
>
> ***(4) The average ground slope of the naturally occurring soil across the entire width and length of the area where a bottomless sand filter is proposed to be constructed shall not exceed 5 percent.***
>
> ***(5) When the average ground slope of the naturally occurring soil across the entire width and length of the area where an in-ground leachfield is proposed to be constructed, or where the limits of the mound fill material for a leachfield to be constructed in a mound is proposed, or where the infiltrative surface for an atgrade leachfield is proposed to be constructed, exceeds 20 percent, the design shall include the following:***

(A) Methods for site stability in the area of the leachfield before, during, and after construction with specific attention to erosion prevention and sediment control.

(B) Specifications for:

(i) construction of the wastewater system;

(ii) stormwater diversions if needed to prevent stormwater from eroding soil in the area of the leachfield; and

(iii) re-vegetation to prevent soil erosion.

(6) The long dimension of distribution piping in a leachfield shall be laid parallel to the ground slope or contours.

(7) No leachfield shall be constructed in an area where the ground slope or contours create a depression that will act as a natural surface or groundwater collection area.

10.12 TOILETTES : Toilettes à compost, toilettes chimiques et toilettes à incinération

Le règlement prévoit un encadrement minimal des toilettes alternatives (compost, chimiques ou incinération). Cet encadrement vise avant tout la disposition du contenu. Les toilettes chimiques ne sont quant à elle pas abordées du tout.

> ***§ 1-929 Disposal of Contents of Composting or Incinerating Toilets***
>
> ***(a) The contents of a composting or incinerating toilet, provided the toilet does not yield a liquid, may be disposed of as directed in Subsection (c).***
>
> ***(b) The installation and use of composting or incinerating toilets does not create an exemption from any requirement of these Rules, including the requirement that all buildings or structures have wastewater systems that comply with the technical standards in this Subchapter and Subchapters 8 and 10, for the disposal of all other wastewater from the building or structure.***
>
> ***(c) The contents removed from a composting or incinerating toilet shall be disposed of in the following manner:***
>
> ***(1) If disposed of on the same lot on which the toilet is located, the contents shall be disposed of by shallow burial at a location approved by the Secretary in a permit, provided the location meets the following requirements:***
>
> ***(A) complies with the isolation distances and isolation zones required pursuant to § 1-912 for locating an in-ground leachfield; and***
>
> ***(B) maintains a 3-foot separation between the bottom of the excavation for the contents to the seasonal high-water table and a 4-foot separation between the bottom of excavation for the contents to bedrock.***
>
> ***(2) If not disposed of on the same lot on which the toilet is located, the contents shall be disposed of:***
>
> ***(A) at a certified landfill; or***
>
> ***(B) in accordance with the Vermont Solid Waste Management Rules.***

La seule autre référence aux toilettes alternatives dans le règlement concerne le calcul du débit de conception. L'article 1-803 permet, dans certaines situations, de soumettre une demande de réduction du débit de conception lorsque le bâtiment est desservi par des toilettes alternatives.

> ***§ 1-803 Design Flows***
>
> ***(g) In the following situations, a designer may reduce, by the reduction indicated as follows, the design flow calculated pursuant to Subsection (d), (e), and (f) for individual components of a wastewater system or potable water supply:***

[…]

(2) If not more than four living units will be served by a component and each living unit contains only composting or incinerating toilets, the design flow for the component may be reduced by 25 percent.

(3) If a building or structure, other than in a living unit, or a campground, that will be served by a component contains only composting or incinerating toilets and the Secretary determines that a reduction in design flow proposed by the applicant's designer for the component will not increase the probability the system or supply will fail, the design flow for the component may be the design flow approved by the Secretary.

10.13 PERMÉABILITÉ DU SOL :

Le règlement décrit différents seuils de perméabilité en fonction du temps de percolation correspondant essentiellement aux mêmes plages utilisées dans le RETEURI, soit 1-10 min/pouce (0-4 min/cm), 10-60 min/pouce (4 min/cm à 23 min/cm), 60-120 min/pouce (23 min/cm à 47 min/cm) et 120 min/pouce (47 min/cm) et plus. Le tableau 9-2 à l'article 1-910.

Table 9-2
Percolation Test Water Level Drops

Soil Texture	Anticipated Percolation Rate (minutes per inch)	Drop in Inches
Course Sand to Loamy Sand	1 – 10	2
Fine Sand to Very Fine Sandy Loam	10 – 60	1
Loam to Silty Clay	60 – 120	0.5

Le taux de percolation permet de déterminer un taux de charge hydraulique à l'aide du tableau 9-4 et ainsi dimensionner les systèmes de traitement par infiltration. Le taux de charge hydraulique varie aussi en fonction du type de système à construire.

Table 9-4
Application Rates Established Using Soil Excavations and Percolation Tests

In-ground Trenches	In-ground Beds	At-grade Leachfields
$AR = 3 \div \sqrt{t}$ where: AR is the application rate in gallons per square foot of trench per day with a maximum allowable application rate of 1.5 gallons per square foot per day; and t equals the second slowest percolation rate in minutes per inch for the site where the maximum acceptable value for t is 60 minutes per inch.	$AR = 0.8(3 \div \sqrt{t})$ where: AR is the application rate in gallons per square foot of bed per day with a maximum allowable application rate of 1.2 gallons per square foot per day; and t equals the second slowest percolation rate in minutes per inch for the site where the maximum acceptable value for t is 60 minutes per inch.	$AR = 0.8(3 \div \sqrt{t})$ where: AR is the application rate in gallons per square foot of bed per day with a maximum allowable application rate of 1.0 gallons per square foot per day; and t equals the second slowest percolation rate in minutes per inch for the site where the maximum acceptable value for t is 60 minutes per inch.

De plus, le règlement prévoit aussi la possibilité de déterminer le taux de charge hydraulique en fonction de la texture et structure du sol. Le taux de charge hydraulique ainsi déterminé varie en fonction du type de système à construire.

Table 9-3
Application Rates Established Using Soil Excavation

Soil Characteristics		Application Rates (gallons per square foot per day)			
Texture	**Structure Type[1]**	**In-Ground Trench**	**In-ground Bed**	**At-Grade Leachfield**	**Leachfield in a Bottomless Sand Filter**
Very Coarse Sand or Coarser	SG	See § 1-919(b)	See § 1-919(b)	1.00	1.00
Coarse Sand, Sand	SG	1.50	1.20	1.00	1.00
Loamy Coarse Sand, Loamy Sand	SG	1.50	1.20	1.00	1.00
Fine Sand, Very Fine Sand, Loamy Fine Sand, Loamy Very Fine Sand	SG	1.00	0.80	0.80	0.80
	MA/PL	0.50	0.40	0.40	0.40
	PR/ABK/ SBK/GR	0.70	0.60	0.60	0.60
Coarse Sandy Loam, Sandy Loam	MA/PL	0.50	0.40	0.40	0.40
	PR/ABK/ SBK/GR	0.70	0.60	0.60	0.60
Fine Sandy Loam, Very Fine Sandy Loam	MA/PL	0.50	0.40	0.40	0.40
	PR/ABK/ SBK/GR	0.60	0.50	0.50	0.50
Loam	MA/PL	0.50	0.40	0.40	0.40
	PR/ABK/ SBK/GR	0.60	0.50	0.50	0.50
Silt Loam, Silt	MA/PL	0.30	0.20	0.20	N/A
	PR/ABK/ SBK/GR	0.40	0.30	0.30	N/A
Sandy Clay Loam, Clay Loam, Silty Clay Loam	MA/PL	0.25	0.20	0.20	N/A
	PR/SBK/ GR	0.30	0.20	0.20	N/A
Sandy Clay, Clay, Silty Clay	N/A (See § 1-926)				

Adapted from J. Tyler, 2000.
[1] The abbreviations used for structure are: SG = single grain; GR = granular; MA = massive; PL = platy; PR = prismatic; ABK = angular blocky; SBK = subangular blocky.

Le tableau ci-dessus illustre qu'il est, généralement, impossible de construire un système de traitement par infiltration dans un sol argileux « sandy clay, clay, silty clay ». Toutefois, le tableau réfère à l'article 1-926 qui propose une solution alternative dans de telles conditions, soit le « Storage and Dose Approach to Wastewater Systems ».

> ***§ 1-926 Storage and Dose Approach to Wastewater Systems***
>
> ***(a) A Class 1 designer is required to submit the installation certification required for the installation of a wastewater system that uses a storage and dose approach.***
>
> ***(b) Notwithstanding the depths of naturally occurring soil required pursuant to § 1-903 to site a leachfield on sites where the height of the seasonal high-water table would otherwise preclude the construction of a wastewater system, wastewater systems with a design flow of 700 gallons per day or less that use a storage and dose approach can be permitted.***
>
> ***(c) Minimum requirements for a wastewater system using a storage and dose approach:***
>
> ***(1) Wastewater may be stored without discharging to the leachfield for a maximum of 3 months.***
>
> ***(2) The wastewater system shall be designed so that the induced water table will remain at least 6 inches below ground surface when wastewater, including that which was stored, is discharged to the leachfield.***
>
> ***(3) The wastewater system shall be designed using the 2-year time of travel management zone specified in § 1-907.***
>
> ***(4) The wastewater system shall include storage tanks that are sized to store the average water use of the building or structure or campground to be served by the wastewater system, taking into account the expected occupancy of the building or structure or campground, for the expected duration of the storage period.***
>
> ***(A) If the wastewater system will serve a building or structure with a residential use, the storage tanks shall be sized to store, for a 30-day storage period, a minimum of 150 gallons per day per living unit plus an additional 50 gallons per day per person above three for a living unit with a proposed maximum residential occupancy over three persons.***
>
> ***(B) The wastewater system shall provide space for additional storage tanks to be added to accommodate the design flow identified in § 1-803.***
>
> ***(C) The storage tanks shall include a high-water alarm system and space for 5 days of storage shall be provided above the alarm level.***
>
> ***(5) The design of the wastewater system shall incorporate a groundwater monitoring control system that allows discharge of wastewater to the leachfield***

> ***only when the induced water table remains at least 6 inches below ground surface.***

Le règlement n'impose pas de hiérarchie dans le choix du type de système de traitement des eaux usées. C'est-à-dire, que le règlement n'impose pas de préséance dans le choix d'une installation de traitement par infiltration plutôt que par une solution de rejet de surface. Toutefois, nous comprenons que la procédure pour la mise en place d'un système de traitement avec rejet en surface est suffisamment complexe qu'elle est surement utilisée en dernier recours.

L'utilisation de fosses de rétention est une solution de dernier recours. L'article 1-928 encadre ce type d'installation.

> ***§ 1-928 Holding Tanks***
>
> ***(c) The Secretary may approve a holding and pump out tank as a wastewater system serving a building or structure in lieu of a soil-based wastewater system or sanitary sewer service line that conveys wastewater to a wastewater treatment facility or indirect discharge system, whether or not the building or structure is publicly owned, when:***
>
> ***(1) the building or structure is served by an existing wastewater system that has failed, or is expected to fail;***
>
> ***(2) there is no other cost feasible alternative; and***
>
> ***(3) a variance is sought and granted pursuant to § 1-802 from all technical standards in this Subchapter and Subchapter 10 that would otherwise apply.***

10.14 FORTES CONTRAINTES : Solutions pour les sites à fortes contraintes

Le règlement encadre la construction des installations septiques dans les cas de terrains ayant de fortes contraintes. Des alternatives sont proposées pour les terrains en zone inondable, en rive et littoral, ayant une faible épaisseur de sol ou comportant une forte pente.

L'implantation d'un système de traitement par infiltration est soumise aux dispositions de l'article 1-903. Au sens du règlement une plaine inondable comprend la rive et le littoral.

> ***floodway: the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood (1/100) without cumulatively increasing the water surface elevation more than one foot at any point. Flood hazard areas and floodways may be shown on separate map panels.***

> ***§ 1-903 General Requirements for Soil-Based Wastewater Systems***
>
> ***(e) No portion of a wastewater system, except a sanitary sewer service line or sanitary sewer collection line, shall be located in a floodway.***
>
> ***(f) A wastewater system shall be located, designed, and constructed in a manner that avoids impairment to the system and contamination from the system during flooding if the site is located in a mapped flood hazard area.***

D'autre part, lorsque la couche de sol n'est pas suffisante, le règlement prévoit des conditions d'implantation moins restrictives pour des systèmes hors-sol « mound » en aval d'un système de traitement avancé. La proximité des eaux souterraines ou d'une couche imperméable peut notamment être compensée par une épaisseur supplémentaire de sable filtrant ou des modifications du site.

> ***§ 1-903 General Requirements for Soil-Based Wastewater Systems***
>
> ***(l) Notwithstanding Subsection (j), the following are the required depths of naturally occurring soil and mound fill material for a leachfield in a mound that disposes of filtrate effluent and is designed in accordance with § 1-904(a).***
>
> ***(1) The minimum depth of naturally occurring soil below ground surface to site the leachfield shall be 18 inches to bedrock.***
>
> ***(2) The minimum depth of naturally occurring soil beneath the mound fill material to site the leachfield shall be:***
>
> ***(A) 6 inches to the induced water table, as demonstrated through a hydrogeological analysis; or***
>
> ***(B) 6 inches to the induced water table at the limits of the mound fill material, as demonstrated through a hydrogeological analysis completed through a method***

> ***identified in Subsection (r)(1)(B) or (C), regardless of whether the induced water table rises to less than 6 inches beneath the fill material or rises into the mound fill material beneath the leachfield.***
>
> ***(3) The minimum depths of naturally occurring soil shall be met:***
>
> ***(A) for a distance of 25 feet beyond the limits of the fill material of the mound in the downslope direction;***
>
> ***(B) for a distance of 10 feet beyond the limits of the fill material of the mound at each end of the mound; and***
>
> ***(C) at the limits of the fill material of the mound in the upslope direction.***
>
> ***(4) The depth of mound fill material below the bottom of the leachfield stone or other infiltrative surface of the leachfield shall be sufficient to obtain the following vertical separations:***
>
> ***(A) 18 inches to the induced water table, as demonstrated through a hydrogeological analysis;***
>
> ***(B) 18 inches to a soil with:***
>
> ***(i) a percolation rate slower than 120 minutes per inch; or***
>
> ***(ii) a texture of sandy clay, silty clay, or clay; and***
>
> ***(C) 24 inches to bedrock.***
>
> ***(5) The minimum depth of mound fill material between the bottom of the leachfield stone or other infiltrative surface of the leachfield and ground surface shall be 12 inches.***

Le règlement prévoit aussi des adaptations possibles afin d'abaisser le niveau des eaux souterraines.

> ***§ 1-921 Leachfields in Mounds***
>
> ***(c) The design of a leachfield in a mound may rely on curtain drains to lower the seasonal high-water table to 24 inches or more in order to comply with § 1-903(j) without complying with the requirements of § 1-906(a) when:***
>
> ***(1) the leachfield disposes of 600 gallons or less per day of effluent;***
>
> ***(2) the leachfield is sited on ground which has a slope;***
>
> ***(3) the leachfield consists of a maximum of either 2 trenches or a bed that has a maximum width of 10 feet;***
>
> ***(4) the seasonal high-water table is 18 inches or more below the naturally occurring soil prior to use of the curtain drain;***

> ***(5) the bottom of the curtain drain is designed to be a minimum of 12 inches into the soil with a texture of silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, clay, and silty clay;***
>
> ***(6) any hydrogeological analysis performed for the leachfield is based on an assumed seasonal high-water table of 18 inches below the ground surface; and***
>
> ***(7) the Secretary agrees the curtain drain will lower the seasonal high-water table to 24 inches or more.***

De façon générale, il est permis d'abaisser le niveau des eaux souterraines à l'aide de travaux de drainage.

> ***§ 1-906 Site Modifications***
>
> ***(a) Requirements for curtain drains.***
>
> ***(1) Except for a leachfield designed in a mound pursuant to § 1-921(c), if the area in which a leachfield is proposed to be located does not comply with depth of naturally occurring soil required pursuant to § 1-903 to the seasonal high-water table, the design of a wastewater system may, in the following circumstances only, rely on curtain drains to lower the seasonal high-water table in order to comply with § 1-903: […]***

Il est également acceptable de modifier un site en pente forte par des travaux de remblai-déblai aux conditions de l'article 1-906.

> ***§ 1-906 Site Modifications***
>
> ***(b) Requirements for sites following re-grading.***
>
> ***(1) When a site is re-graded for the purpose of constructing a leachfield, the following requirements shall be met:***
>
> ***(A) Soil excavations required and percolation tests completed pursuant to § 1- 910 shall be performed after re-grading.***
>
> ***(B) There shall be a minimum of 6 feet of naturally occurring soil between the downslope side of any area that has been re-graded and either the edge of a leachfield or limits of the fill material for the particular type of leachfield that is intended, whichever is larger.***
>
> ***(2) It is acceptable to add soil to an area in order to comply with the isolation distance required pursuant to § 1-912 between slopes greater than 30 percent and the edge of the leachfield or limits of the fill material for the particular type of leachfield that is intended.***

(3) Cuts and fills of 1 foot or less do not constitute re-grading.

10.15 ÉTUDES : Études préalables et mise aux normes

L'annexe A du règlement décrit en détails les documents qui doivent être soumis par le demander d'un permis. Selon cette annexe de 6 pages, des informations, suivantes doivent être fournies : l'identification du site, les contraintes environnantes, l'épaisseur et la perméabilité du sol, les paramètres de dimensionnement, le design du système proposé, etc. L'annexe A est reproduite en annexe du présent document.

De plus, l'article 1-301, du règlement encadre les situations qui nécessitent l'obtention d'un permis. Les articles 1-302, 1-303, et 1-304, encadrent les situations d'exclusion ou d'exceptions.

> ***Subchapter 3 – Wastewater System and Potable Water Supply Permits***
>
> ***§ 1-301 Permit Required***
>
> ***Except as provided in this Section and in § 1-302, § 1-303, and § 1-304, no person shall take or cause to be taken any of the following actions without first obtaining a permit or permit amendment from the Secretary for the construction and operation of a potable water supply and wastewater system:***
>
> ***(1) the subdivision of a lot or lots;***
>
> ***(2) the construction of a new potable water supply or wastewater system;***
>
> ***(3) the physical modification or replacement of an existing potable water supply or wastewater system;***
>
> ***(4) the construction of a new building or structure, including when reconstruction or replacement;***
>
> ***(5) the connection of an existing potable water supply or wastewater system to a building or structure;***
>
> ***(6) the modification of an existing building or structure in a manner that increases the design flow of any component of the potable water supply or wastewater system or modifies other operational requirements of a potable water supply or wastewater system;***
>
> ***(7) the change in use of a building or structure in a manner that increases the design flow of any component of the potable water supply or wastewater system or modifies other operational requirements of a potable water supply or wastewater system;***
>
> ***[…]***

D'autre part, le règlement détaille 9 pages de clauses d'exemptions dans certaines situations comme par exemple :

> ***§ 1-304 Permit Exemptions***
>
> ***The following actions are exempt from the permitting requirements of this Subchapter, provided no other action is taken or caused to be taken that under these Rules requires the issuance of a permit or permit amendment:***
>
> ***[…]***
>
> ***(10) The minor repair or minor replacement of a potable water supply or wastewater system.***

Ces exemptions visent également la modification partielle d'une installation sous certaines conditions. L'item numéro 5 prévoit explicitement que la nouvelle partie doit toutefois être réalisée en conformité avec la version courante du règlement.

> ***§ 1-301 Permit Required [...]***
>
> ***(b) When an application proposes to utilize all of, or a portion of, an existing potable water supply or wastewater system and does not involve an increase in design flow of any component of the potable water supply or wastewater system or involve a modification of other operational requirements of the potable water supply or wastewater system, the Secretary may issue a permit or permit amendment authorizing the use of the existing portions of the potable water supply and wastewater system even if those portions are not in full compliance with the technical standards in Chapters 8, 9, 10, 11, and 12, provided:***
>
> ***(1) The existing portions of the potable water supply and wastewater system are:***
>
> ***(A) exempt from the permitting requirements of this Subchapter under § 1- 303; or***
>
> ***(B) if the application proposes only the subdivision of an improved lot and no other activities requiring a permit, permitted and in compliance with the permit.***
>
> ***(2) A designer certifies that the existing portions of the potable water supply are not a failed supply and the existing portions of the wastewater system are not a failed system.***
>
> ***(3) The existing portions of the potable water supply and wastewater system comply with the horizontal isolation distances required pursuant to § 1-912 and § 1-1104 for distances to new portions of the building or structure or campground that:***
>
> ***(A) will be constructed outside of the footprint of the existing or replaced building or structure or campground; and***
>
> ***(B) will be served by the wastewater system and potable water supply.***

(4) The existing portions of the potable water supply and wastewater system are connected to a building or structure or campground or were disconnected not more than 4 years prior to the application to utilize the existing supply or system.

(5) The new portions of the potable water supply and wastewater system proposed in the application comply with the technical standards in Chapters 8, 9, 10, 11, and 12 of these Rules.

(6) If the application involves the subdivision of land:

(A) a replacement area, or a replacement system proposed in lieu of a replacement area, is designated for the resulting complete wastewater system, and other existing wastewater systems on the subdivided lot, unless the conditions of § 1-902(b) are met; and

(B) the existing portions of the potable water supply and wastewater system comply with the horizontal isolation distances required pursuant to § 1- 912 and § 1-1104 for distances to new property lines.

10.16 AUTRES :

Éléments du Q-2, r.22 qui sont couverts par le territoire visé

Définitions	x
Hiérarchie du choix d'un système	
Obligation de vidange des fosses septiques	
Méthodes pour établir la perméabilité du sol	x
Plages de perméabilité	x
Référence aux normes BNQ/NSF	x
Normes de construction des fosses construites sur place	x
Préfiltre	x
Norme spécifique au déboisement (élément épurateur classique)	
Conduite d'amenée, raccordements et ventilation	
Champ d'application du Règlement/type d'eau	x
Prohibition de rejeter des eaux usées	
Interdiction d'utiliser certains produits (désinfection de ces eaux usées)	
Conditions d'émission des permis (plan, études, etc.)	x
Implication d'un professionnel compétent pour la conception (Ordre professionnels)	x
Désaffectation des systèmes	x
Gestion des boues et des autres résidus	x
Cheminement des eaux et des effluents	
Normes de localisation pour les systèmes étanches et les systèmes non étanches	x
Normes techniques à respecter (matériaux, dimensions, etc.)	x
Conditions d'implantation des systèmes (pente, perméabilité, épaisseur de sol naturel, etc.)	x
Obligation d'entretien et/ou de maintenir un contrat d'entretien des systèmes certifiés	
Normes de rejet des systèmes	x
Systèmes spécifiquement pour des résidences/bâtiments existants	
Toilettes à compost	x
Cabinet/toilettes sèches	x
Solutions si ségrégation des eaux (toilettes vs eaux ménagères) (ex : vidange périodique)	
Déclencheurs/droits acquis pour la mise aux normes de systèmes existants	x
Dispositions encadrant les rejets au fossé/cours d'eau	x
Déphosphatation	x
Désinfection	
Méthodes de prélèvement et d'analyse des rejets des systèmes	x
Définit la responsabilité des municipalités pour l'application du Règlement	x
Amendes/infractions	
Dispositions applicables à des territoires particuliers (Basse-Côte-Nord Iles-de-la-Madeleine, etc.)	

Éléments couverts par le territoire visé et qui ne sont pas traités dans le Q-2, r.22

- L'inspection des travaux par un professionnel certifié est obligatoire par règlement (Section § 1-311 Construction and Installation Certification)
- Le règlement prévoit la réserve d'une surface de remplacement pour l'implantation d'un système dans certaines circonstances. (Section § 1-902 Replacement Area)
- Le règlement prévoit l'utilisation de marais filtrant à titre de traitement avancé sans certification. (Section § 1-925 Constructed Wetlands)
- La procédure de dérogation est établie par règlement (Section § 1-802 Variances)

ANNEXES Vermont:

1- TABLEAU 9.5 DU SOUS CHAPITRE 9

(pages suivantes)

Subsections (e) or (f), or unless an isolation zone is required in lieu of an isolation distance for the particular feature or object.

Table 9-5
Horizontal Isolation Distances, in Feet, for Features and Objects

Features and Objects	Sanitary Sewer Collection Line, Sanitary Sewer Service Line and Manholes	Wastewater Tanks[1]	In-Ground Leachfields and Replacement Areas
	Closest Portion of the Collection Line, Service Line, or Manhole	Outside Edge of the Tanks	Edge of Leachfield Stone, Other Infiltrative Surface , or Replacement Areas
Curtain drains (located downslope of a leachfield)	N/A	10	75
Curtain drains (located upslope of a leachfield)	N/A	10	35
Drainage swales and ditches with seeps, including seasonal seeps (located downslope of a leachfield)	N/A	25	75
Drainage swales and ditches with seeps, including seasonal seeps (located upslope of a leachfield)	N/A	25	35
Drainage swales and ditches without seeps	N/A	N/A	25
Foundation, footing, or perimeter of a building or structure with a drain (located downslope of a leachfield)	N/A	10	75
Foundation, footing, or perimeter of a building or structure with a drain (located upslope of a leachfield)	N/A	10	20
Foundation, footing, or perimeter of a building or structure without drains (located downslope of a leachfield)	N/A	10	20
Foundation, footing, or perimeter of a building or structure without a drain (located upslope of a leachfield)	N/A	10	20

Features and Objects	Sanitary Sewer Collection Line, Sanitary Sewer Service Line and Manholes	Wastewater Tanks[1]	In-Ground Leachfields and Replacement Areas
	Closest Portion of the Collection Line, Service Line, or Manhole	Outside Edge of the Tanks	Edge of Leachfield Stone, Other Infiltrative Surface , or Replacement Areas
Potable water sources in bedrock or confined surficial aquifer, (proposed, existing, or permitted)	50	Requires isolation zone (See Table 9-6)	
Potable water sources in an unconfined surficial aquifer (proposed, existing, or permitted)	75	Requires isolation zone (See Table 9-6)	
Property lines	10	10	25
Public water sources (proposed, existing, or permitted)	50	Requires isolation zone (See Table 9-6)	
Roadways, driveways, parking lots	N/A	5	10
Slopes exceeding 30 percent	N/A	10	25
Surface water, normal high-water elevation[2]	10	25	50
Stormwater conveyance/treatment/control practice	10	25	50
Trees	10	10	10
Water mains (proposed, existing, or permitted)	Distances and requirements established in § 1-1007 apply in lieu of this Section	50	50
Water service lines and water service pipes (pressure) (proposed, existing, or permitted)	Distances and requirements established in § 1-1007 apply in lieu of this Section	25	25
Water service lines and water service pipes (suction) (proposed, existing, or permitted)	Distances and requirements established in	50	100

Features and Objects	Sanitary Sewer Collection Line, Sanitary Sewer Service Line and Manholes	Wastewater Tanks[1]	In-Ground Leachfields and Replacement Areas
	Closest Portion of the Collection Line, Service Line, or Manhole	Outside Edge of the Tanks	Edge of Leachfield Stone, Other Infiltrative Surface , or Replacement Areas
	§ 1-1007 apply in lieu of this Section		
Water sources that are not a potable water source or public water source	10	50	100
Water storage tanks (atmospheric tank located below ground surface) (proposed, existing, or permitted)	50	50	50

Table 9-5 (continued)
Horizontal Isolation Distances, in Feet, for Features and Objects

Features and Objects	At-Grade Leachfields		Leachfields in Mounds			Leachfields in Bottomless Sand Filters
	Edge of Leachfield Stone	Limits of Fill Material	Leach-field	Effective Basal Area	Limits of Fill Material	Enclosure
Curtain drains (located upslope of a leachfield)	35	35	35	35	35	35
Drainage swales and ditches with seeps, including seasonal seeps (located downslope of a leachfield)	75	50	75	75	50	75
Drainage swales and ditches with seeps, including seasonal	35	10	35	35	10	35

Features and Objects	At-Grade Leachfields		Leachfields in Mounds			Leachfields in Bottomless Sand Filters
	Edge of Leachfield Stone	Limits of Fill Material	Leach-field	Effective Basal Area	Limits of Fill Material	Enclosure
seeps (located upslope of a leachfield)						
Drainage swales and ditches without seeps	25	10	25	25	10	25
Curtain drain, foundation, footing, or perimeter of a building or structure with a drain (located downslope of a leachfield)	75	50	75	75	50	75
Foundation, footing, or perimeter of a building or structure with a drain (located upslope of a leachfield)	20	10	20	20	10	20
Foundation, footing, or perimeter of a building or structure without drains (located downslope of a leachfield)	35	35	35	35	35	35
Foundation, footing, or perimeter of a building or structure without a drain (located upslope of a leachfield)	20	20	20	20	20	20
Potable water sources in bedrock or confined surficial aquifer, (proposed, existing, or permitted)	Requires isolation zone (See Table 9-6)					
Potable water sources in an unconfined surficial	Requires isolation zone (See Table 9-6)					

Features and Objects	At-Grade Leachfields		Leachfields in Mounds			Leachfields in Bottomless Sand Filters
	Edge of Leachfield Stone	Limits of Fill Material	Leach-field	Effective Basal Area	Limits of Fill Material	Enclosure
aquifer (proposed, existing, or permitted)						
Property lines	25	10 for upslope and sides, 25 for downslope	25	25	10 for upslope and sides, 25 for downslope	25
Public water sources (proposed, existing, or permitted)	Requires isolation zone (See Table 9-6)					
Roadways, driveways, parking lots	10	10 for upslope and sides, 25 for downslope	10	10	10 for upslope and sides, 25 for downslope	10 for upslope and sides, 25 for downslope
Slopes exceeding 30 percent	25	25	25	25	25	25
Stormwater conveyance/ treatment/ control practice	50	50	50	50	50	50
Surface water, normal high-water elevation[2]	50	50	50	50	50	50
Trees	10	0	10	10	0	10
Water mains (proposed, existing, or permitted)	50	10 for upslope and sides, 25 for downslope	50	50	10 for upslope and sides, 25 for downslope	50
Water service lines or water service pipes (pressure) (proposed, existing, or permitted)	25	10 for upslope and sides, 25 for downslope	25	25	10 for upslope and sides, 25 for downslope	25
Water service lines or water service pipes (suction)	100	25	100	100	10 for upslope and sides,	100

Features and Objects	At-Grade Leachfields		Leachfields in Mounds			Leachfields in Bottomless Sand Filters
	Edge of Leachfield Stone	Limits of Fill Material	Leach-field	Effective Basal Area	Limits of Fill Material	Enclosure
(proposed, existing, or permitted)					25 for downslope	
Water sources that are not potable water sources or public water sources	100	10 for upslope and sides, 25 for downslope	100	100	10 for upslope and sides 25 for downslope	100
Water storage tanks (atmospheric tank located below ground surface) (proposed, existing, or permitted)	50	25	50	50	25	50

[1] Wastewater Tanks include septic tanks, pump stations, dosing siphons, holding tanks, wastewater storage tanks, wastewater treatment tanks, sand filters, constructed wetlands, and grease tanks.
[2] The horizontal location to surface water shall allow for possible future widening of the surface water due to bank erosion.

(b) Subsections (c) and (d), in conjunction with Table 9-6, identify the size and shape of the isolation zone around the identified proposed, existing, or permitted drinking water sources in which no portion of each identified component of a wastewater system, and of each replacement area, shall be located, unless the Secretary has authorized a reduction to the isolation zone or required a larger isolation zone pursuant to Subsections (e) or (f).

Table 9-6
Distances, in Feet, Used to Create Isolation Zones Around Drinking Water Sources

Proposed, Existing, or Permitted Drinking Water Sources (by gallons per minutes design rate)		Leachfields[1] and Replacement Areas (< 2000 gallons per day design flow)	Leachfields[1] and Replacement Areas (≥ 2000 to < 6500 gallons per day design flow)	Wastewater Tanks[2]
Potable water sources or Public water sources for community water systems, non-community non-transient water systems, and transient non-community water systems (in bedrock or confined surficial aquifer)	≤ 2.0	X = 100 Y = 200	X = 150 Y = 300	X = 50 Y = 50
	> 2.0 and ≤ 5.0	X = 150 Y = 300	X = 150 Y = 300	
	> 5.0 and ≤ 8.0	X = 200 Y = 400	X = 200 Y = 400	
	> 8.0	X = 200 Y = 1000		
Potable water sources or Public water sources for community water systems, non-community non-transient water systems, and transient non-community water systems (in an unconfined surficial aquifer)	≤ 8.0	X = 150 Y = 500	X = 150 Y = 1000	X = 75 Y = 75
	> 8.0	X = 200 Y = 1000		

[1] For the purposes of this table, the term "leachfields" includes the edge of the leachfield stone or other infiltrative surface for in-ground leachfields; the edge of leachfield stone for at-grade leachfields; the leachfield and effective basal area for leachfields in mounds; and the enclosure for leachfields in bottomless sand filters. It does not include the limits of fill material for in-ground leachfields, at-grade leachfields, or a leachfields in mounds.
[2] Wastewater Tanks include septic tanks, pump stations, dosing siphons, holding tanks, wastewater storage tanks, wastewater treatment tanks, sand filters, constructed wetlands, and grease tanks.

Note: See § 1-903(g) for additional restrictions concerning the location of a wastewater system components in proximity of a Public Community Water System.

(c) One of the following methods shall be used to determine the size and shape of the required isolation zone around proposed, existing, or permitted drinking water sources, with X and Y equaling the numbers identified in Table 9-6:

2- ANNEXE A – DEMANDE DE PERMIS

(pages suivantes)

Appendix A – Information for an Application

(a) For the purposes of this appendix, the term "project" means all components of all wastewater systems and potable water supplies that are required to be part of an application.

(b) When the application includes one or more existing or proposed lots, the latitude and longitude for the center of each existing or proposed lot identified in the application shall be reported on the application form using a global positioning system receiver using the NAD 83 coordinate system or a NAD 83 base map. The coordinates shall be reported in decimal degrees to five decimal places with an accuracy of +/- 50 feet. Because many lots are irregularly shaped, the center location can be approximate.

(c) When the application needs to identify proposed or existing buildings or structures or campgrounds, soil-based wastewater systems, sanitary sewer service lines, sanitary sewer collection lines, potable water supplies, or the subdivision of land, a site plan shall be included with the application that includes the following information:
- (1) Preparer's signature, plan title, date, and revision date(s) on all plans.
- (2) Legend or clear identification of all plan features.
- (3) North arrow.
- (4) Plan scale as required by Rules stated on the plans. A graphic representation may be shown but does not replace a stated scale.
  - (A) Except as required by Subsection (c)(4)(C), site plans shall be prepared to a scale not greater than 1-inch equals 100 feet.
  - (B) Site plans shall be prepared to a scale not greater than 1-inch equals 30 feet for those site plans identifying the limits of the infiltrative area for an in-ground leachfield; the limits of the stone and fill material for an at-grade leachfield; the limits of the fill material for a mound; the enclosure for a bottomless sand filter; and the area 25 feet downslope and 10 feet on all other sides from the limits of the stone and fill material for an at-grade leachfield, the limits of the fill material for a mound, and the enclosure for a bottomless sand filter.
  - (C) Notwithstanding Subsection (c)(4)(A), a site plan may have scale greater than 1-inch equals 100 feet, including the use of aerial photographs, for the purposes of:
    - (i) identifying the boundary line locations and dimensions when the size of the lot is greater than 10 acres;
    - (ii) identifying a site listed on the hazardous sites list maintained by the Waste Management Division of the Department that is located greater than 500 feet and within one third of a mile to a potable water supply; or
    - (iii) identification of surface drainage patterns.
- (5) The location and elevation of the permanent benchmark established on the lot.
- (6) All existing and proposed boundary lines and boundary line dimensions.
- (7) For the lot on which a wastewater system or a potable water supply is proposed:
  - (A) Lot numbers or unique lot designations for subdivisions involving 2 or more lots.
  - (B) Campsite numbers or unique campsite designations for campgrounds.

(C) Existing and proposed permanent legal accesses.
(D) Existing and proposed driveways, parking lots, and roadways.
(E) Existing and proposed buildings or structures, or campgrounds.
(F) Designated Well Head Protection Area (WHPA).
(G) Surface water such as streams, lakes, ponds, reservoirs, and other water impoundments.
(H) Stormwater conveyance/treatment/control practices.
(I) Class 1 or Class II wetlands.
(J) Base flood elevation.
(K) Floodways.

(8) Contours shall be provided using the following specifications:
(A) 5-foot contour interval shall be provided for drawing isolation zones around leachfields, wastewater system components, potable water supply sources, and potable water supply components except when the component of the potable water supply is a water service line or a water service pipe, and except when the component of the wastewater system is a sanitary sewer service line connecting to a sanitary sewer collection line.
(B) 2-foot contour intervals shall be provided for that portion of the plan identifying the limits of the stone and fill material for an at-grade leachfield; the limits of the fill material for a mound; the enclosure for a bottomless sand filter; and the area 25 feet downslope and 10 feet on all other sides from the limits of the stone and fill material for an at-grade leachfield, the limits of the fill material for a mound, and the enclosure for a bottomless sand filter.
(C) At least 90 percent of the contours shall be accurate within one half contour interval and no inaccuracies shall exceed one contour interval.
(D) Photogrammetric contour maps may only be used to show the general contour of the land when it is necessary to show ground or groundwater flow to such items as hazardous waste sites and public water sources.

(d) For an application proposing a wastewater system, the following additional information shall be provided:
(1) Required information to be shown on the site plan for a soil-based wastewater system:
(A) Location of all components of the proposed wastewater system and replacement area.
(B) Location of all proposed, existing or permitted potable water sources and public water sources that are on the applicant's property.
(C) Location of all proposed, existing, or permitted potable water sources and public water sources that are off the applicant's property but that have an isolation zone identified in § 1-912(b) that ends 50 feet or less from the proposed leachfield.
(D) Location of any Zone 1 of a Public Community Water System Source Protection Area that are on the applicant's property or are off the applicant's property but within 50 feet of the applicant's nearest property line.

(E) Isolation zones identified in § 1-912(b) drawn around all proposed, existing, or permitted potable water sources and public water sources identified in Subsection (d)(1)(B) and (C).
(F) Location and identification of features and objects identified in Table 9-5 that are on the applicant's property.
(G) All soil test pit locations with corresponding numbers or letter designations conducted within 50 feet of a leachfield.
(H) All percolation test locations with corresponding numbers or letter designations conducted within 50 feet of a leachfield.
(I) Existing and proposed footing drains, curtain drains, and drainage pipes or tiles within 75 feet of a leachfield.
(J) Existing and proposed surface water drainage ditches, and surface water swales within 75 feet of a leachfield.
(K) Ledge outcrops and other site limitations that may interfere with the proper installation of the components of the wastewater system.

(2) Required information to be shown on the site plan for a water main, water service line, or water service pipe:
(A) Location of existing, proposed, or permitted water mains, water service lines, or water service pipes that are on the applicant's property or off the applicant's property but are within 50 feet of the applicant's nearest property line.
(B) Elevations and material specifications of the water main, water service line, or water service pipe when:
(i) a sanitary sewer collection line or sanitary sewer service line crosses a water main, water service line, or water service pipe; or
(ii) a sanitary sewer collection line or sanitary sewer service line is within the horizontal isolation distance to a water main, water service line, or water service pipe.

(3) Plans with details for components of a wastewater system.
(A) Preparer's signature, plan title, date, and revision date(s) on all plans.
(B) Septic tank effluent filter manufacturer and model number identified with the tank detail.
(C) Septic tank size, dimensions, riser to grade, and material specifications.
(D) Grease tank size, dimensions, and material specifications.
(E) Innovative/alternative system or component if the system or component has general, pilot, or experimental approval.
(F) Pump station including float material (mercury floats are prohibited), float elevations, venting, and visual and audio alarm location.
(G) Storage tank size, dimensions, riser to grade, and material specifications.
(H) Dosing siphon.
(I) Sanitary sewer service line, or force main when a component of a sanitary sewer service line, with minimum pipe slope for the service line, invert elevations at the building and at each component of the wastewater system, and pipe sizes and material specifications.
(J) Sanitary sewer collection line plan and profile, pipe invert elevations at each component of the wastewater system, and pipe sizes and material specifications.

(K) Sanitary sewer force main, when a component of a sanitary sewer collection line, plan and profile, pipe sizes and material specifications, and pipe invert elevations at each component of the wastewater system.
(L) Trench detail for a sanitary sewer service line, sanitary sewer collection line, and force main when a component of a sanitary sewer service line or sanitary sewer collection line.
(M) Sewer/water crossover detail with invert elevations of the sanitary sewer service line, sanitary sewer collection line, water service line, water service pipe, or water main.
(N) Manhole or cleanout detail that are included on a sanitary sewer collection line or sanitary sewer service line.
(O) Distribution box detail with flow equalization devices.
(P) Vertical cross-section view of the leachfield with bottom trench or bed, invert elevations for distribution piping, at-grade access and clean out ports, and top of field relative to original and proposed ground surface.
(Q) Sanitary sewer service line or sanitary sewer collection line crossing surface water.
(R) Proposed curtain drain.
(S) Erosion prevention and sediment control measures.

(4) Supporting data and narratives.
(A) Calculations for sizing each component of the wastewater system, when required.
(B) Flow metering and wastewater strength analysis, when required.
(C) Calculations to demonstrate all portions of the bottom of the leachfield maintain the depths of naturally occurring soil and fill material required pursuant to § 1-903 to the seasonal high-water table, induced water table, and bedrock.
(D) Hydrogeologic analysis to calculate the induced water table.
(E) Soil descriptions and percolation test results corresponding to the soil test pit and percolation site identified on the site plan.
(F) An application that includes a design of a leachfield based on monitoring of the water table to establish the seasonal high-water table shall include:
(i) all water table monitoring data; and
(ii) an analysis of the water table monitoring data.
(G) Specifications for mound fill material, fill material for sand filters, and bottomless sand filter fill material.
(H) Leakage testing procedure and required result for each component of a wastewater system.
(I) Innovative/alternative system or component manufacturer and model number, if applicable.
(J) Specifications on methods of installation, performance standards, and quality of workmanship.
(K) Operation and maintenance manuals when required by these Rules.
(L) When a constructed wetlands is a component of the wastewater system, a list of plant species.

(e) For an application proposing a potable water supply, the following additional information shall be provided.

(1) Required information to be shown on the site plan for a potable water supply with a potable water source.
  (A) Location of all components of the proposed potable water system.
  (B) Location of all proposed, existing, or permitted leachfields, replacement areas, and wastewater tanks that are on the applicant's property.
  (C) Location of all proposed, existing, or permitted leachfields and wastewater tanks and replacement areas that are off the applicant's property but that have an isolation zone identified in § 1-1104(e) that ends 50 feet or less from the proposed potable water source.
  (D) Isolation zones identified in § 1-1104(e) drawn around all proposed, existing, or permitted leachfields, replacement areas, and wastewater tanks identified in Subsection (e)(1)(B) and (C).
  (E) Location and identification of all potential sources of contamination identified in Table 11-1 that are on the applicant's property or that are off the applicant's property but have an isolation distance that ends 50 feet or less from the proposed potable water source.
  (F) Ledge outcrops and other site limitations that may interfere with the proper installation of the components of the potable water supply.
  (G) Existing or permitted potable water supplies or public water supplies within the isolation distances for interference testing.

(2) Required information to be shown on the site plan for a potable water supply that is a water service line or a water service pipe.
  (A) Location of sanitary sewer collection lines or sanitary sewer service lines that are on the applicant's property and location of sanitary sewer collection lines or sanitary sewer service lines that are off the applicant's property but within 50 feet of the applicant's nearest property line.
  (B) Elevations and material specifications of the sanitary sewer collection line or sanitary sewer service line when:
    (i) a water service line or water service pipe crosses a sanitary sewer collection line or sanitary sewer service line; or
    (ii) a water service line or water service pipe is within the horizontal isolation distance to a sanitary sewer collection line or sanitary sewer service line.

(3) Plans with details for components of a potable water supply.
  (A) Preparer's signature, plan title, date, and revision date(s) on all plans.
  (B) Well construction and material specifications.
  (C) Water service pipe or water service line size and material specifications.
  (D) Water service pipe or water service line trench and material specifications.
  (E) Potable water system treatment components and material specifications, if treatment is included in the design.
  (F) Storage tank size, dimensions, riser to grade, overflow, and material specifications.
  (G) Water service pipe or water service line crossing surface water.

(4) Supporting data and narratives.
  (A) Calculations for sizing each component of the potable water supply, when required.
  (B) Determining the long-term yield for potable water sources if required for the potable water supply.

(C) Calculations for determining the instantaneous peak demand if required for the potable water supply.
(D) Calculations for determining water storage if determining storage is required for the potable water supply.
(E) Water quality testing results.
(F) Flow metering analysis, when required.
(G) Well yield and method for determining the yield.
(H) Pressure and leakage testing of distribution system.
(I) Disinfection specifications for disinfecting potable water supply.
(J) Water system treatment components with manufacturer's make and model numbers, if treatment is included in the design.
(K) Surrounding well logs to demonstrate availability of water.
(L) Interference testing and analysis when required.
(M) Pump manufacturer with pump capabilities and model number.
(N) Specifications on methods of installation, performance standards, and quality of workmanship.
(O) Operation and maintenance manuals.

SOURCES Vermont:

1. *State of Vermont Agency of Natural Resources, Department of Environmental Conservation Drinking Water and Groundwater Protection Division, Environmental Protection Rules Chapter 1, Wastewater System and Potable Water Supply Rules, Avril 2019*
2. *State of Vermont Agency of Natural Resources, Department of Environmental Conservation Drinking Water and Groundwater Protection Division, Environmental Protection Rules Chapter 14, Indirect Discharge Rules, Avril 2019*
3. *Site internet officiel de l'État du Vermont, https://dec.vermont.gov/water/laws/ww-systems-rules*

11.0 VIRGINIE

11.1 ENCADREMENT :

En Virginie c'est le ministère de la santé « Virginia Department of Health » qui est responsable de mettre en place et d'administrer le cadre normatif sur les installations septiques. Les règlements sont basés sur la Loi générale de l'État « Code of Virginia ». Trois règlements sont principalement utiles dans le domaine.

- Le règlement « Sewage Handling and Disposal Regulations », dernière version à jour le 25 août 2016, ci-après le règlement
- Le règlement « Regulations for Alternative Onsite Sewage Systems », dernière version à jour le 28 juin 2019, ci-après le règlement 613
- Le règlement « Alternative Discharging Sewage Treatment Regulations for Individual Single Family Dwellings », ci-après le règlement 640

Le règlement ainsi que le règlement 613 visent les installations de traitement des eaux usées sans limite du volume d'eau à traiter et sans restriction quant aux usages. À titre d'exemple, le tableau 3 du règlement 613 mentionne les systèmes pouvant traiter plus de 2 millions de gallons par jour, soit plus de 7 millions de litres par jour. Ceci-dit, les règlements sont principalement destinés à l'encadrement des installations septiques devant desservir des résidences ou des petits bâtiment isolées, soit pour des usages de 1000 gallons par jour ou moins (3785 L/jour).

> ***"Mass sewage disposal system" means a sewage disposal system or systems which will discharge effluent to a single absorption area or multiple absorption areas with or without combined flows, such that the loading rate applied to any acre, as determined by the department, exceeds 1,200 gallons per day.*** [14]

> ***"Large AOSS" means an AOSS that serves more than three attached or detached single-family residences with a combined average daily sewage flow greater than 1,000 GPD or a structure with an average daily sewage flow in excess of 1,000 GPD.*** [15]

> ***"Small AOSS" means an AOSS that serves no more than three attached or detached single- family residences with a combined average flow of less than or***

[14] Règlement, article 12VAC5-610-120 Definitions
[15] Règlement 613, article 12VAC5-613-10 Definitions

> ***equal to 1,000 GPD, or a structure with an average daily sewage flow of less than or equal to 1,000 GPD.*** [16]

Le règlement 640, vise uniquement les systèmes de traitement des eaux usées des résidences isolées générant un volume d'eau usée de 1000 gallons/jour ou moins (3745 L/jour).

> ***"Alternative discharging sewage treatment system" or "discharging system" means any device or system that results in a point source discharge of treated sewage for which the board may issue a permit authorizing construction and operation when such system is regulated by the SWCB pursuant to a general VPDES permit issued for an individual single family dwelling with flows less than or equal to 1,000 gallons per day on a monthly average.***

Les projets de plus grande ampleur qui nécessitent un rejet en surface sont sous la responsabilité de l'État. En effet, selon l'article 12VAC5-610-30 du règlement, les projets nécessitant le rejet dans un cours d'eau (ex : systèmes d'égout municipaux, traitement des eaux de pluie, etc.) sont sous la juridiction du « Virginia Department of Environmental Quality » (DEQ) en vertu du « Virginia Pollutant Discharge Elimination System » (VPDES) Permit.

Enfin, tel que mentionné à l'article 12VAC5-610-40 du règlement ainsi que sur le site internet du département de la Santé de l'État, l'application des règlements est sous la responsabilité de diverses instances. Toutefois, les autorités locales jouent un rôle important.

> ***12VAC5-610-40. Administration of regulations.***
>
> ***This chapter is administered by the following:***
>
> ***1. State Board of Health. The State Board of Health, hereinafter referred to as the board, has the responsibility to promulgate, amend, and repeal regulations necessary to ensure the safe and sanitary handling and disposal of sewage.***
>
> ***2. State Health Commissioner. The State Health Commissioner, hereinafter referred to as the commissioner, is the chief executive officer of the State Department of Health. The commissioner has the authority to act, within the scope of regulations promulgated by the board, for the board when it is not in session. The commissioner may delegate his powers under this chapter with the exception of his power to issue orders under § 32.1-26 of the Code of Virginia and 12VAC5-610-170 B. The commissioner has final authority to adjudicate contested decisions of subordinate delegated powers under this section prior to appeal of such decisions to the circuit court.***

[16] Règlement 613, article 12VAC5-613-10 Definitions

3. State Department of Health. The State Department of Health, hereinafter referred to as the department, is designated as the primary agent of the commissioner for the purpose of administering this chapter.

4. District or local health departments. The district or local health departments are responsible for implementing and enforcing the operational activities as required by this chapter.

11.2 TYPE D'EAU : Types d'eau visés par l'encadrement

Les règlements s'appliquent aux eaux usées de nature domestique ainsi qu'a des eaux à charges plus élevées.

> ***"Sewage" means water-carried and nonwater-carried human excrement, kitchen, laundry, shower, bath or lavatory wastes separately or together with such underground, surface, storm or other water and liquid industrial wastes as may be present from residences, buildings, vehicles, industrial establishments or other places.***

Il n'y a pas de précision au sujet d'adaptation obligatoire pour des usages ou appareils particuliers (adoucisseur d'eau, salon de coiffure, atelier de mécanique, etc.).

11.3 DENSITÉ MAXIMALE : Densité maximale des installations septiques

Il n'y a pas de disposition relative à la densité des installations septiques dans le règlement ni dans le règlement 613. Toutefois, le règlement 640 contient des dispositions qui fixent un espace minimal devant être respecté entre les points de rejets des systèmes (cours d'eau ou fossé). (règlement 640, article 12VAC5-640-420).

> ***(…)***
>
> ***J. Except as noted below, the department will not approve discharging systems except where discharge points will be at least 500 feet apart. The separation distance may be reduced to 250 feet between discharge points in accordance with the following:***
>
> ***1. For discharges to an all weather stream, the distance may be reduced to 250 feet by providing a Reliability Class II facility.***
>
> ***2. For discharges to a dry ditch or intermittent stream, the distance may be reduced to 250 feet by providing a Reliability Class I system that produces a TL-3 effluent and a fecal coliform concentration of 100 col/100 ml or less.***
>
> ***3. No reduction in the distance between discharge points is allowed for discharges to wetlands.***
>
> ***(…)***

Il n'y a pas d'autre disposition relative à la densité ni à l'impact cumulatif des installations septiques.

11.4 REJETS : Rejets en surface

L'État de Virginie autorise les systèmes de traitement des eaux usées avec rejet en surface (cours d'eau, marais ou fossé) pour les résidences isolées (seulement) générant un maximum de 1000 gallons/jour (3745 L/jour). Les rejets en surface sont encadrés par un règlement distinct, soit le règlement 640 « Alternative Discharging Sewage Treatment Regulations for Individual Single Family Dwellings ».

Ce règlement prévoit explicitement que les rejets de surface peuvent être autorisés sont en cas de dernier recours.

> ***12VAC5-640-30. Scope of regulations.***
>
> ***A. This chapter applies to all alternative discharging sewage treatment systems constructed and operated to serve an individual single family dwelling with flows less than or equal to 1,000 gallons per day on a monthly average. This includes the following systems:[…]***
>
> ***D. The department will not consider issuance of a permit to construct a discharging system, unless all options for conventional and alternative onsite sewage treatment systems have been evaluated and found unsatisfactory in accordance with this section. […]***

Le règlement prévoit des mesures de protection des plans d'eau, entre autres, lorsque ceux-ci sont utilisés comme prise d'eau potable ou lorsqu'il y a un site utilisé pour la baignade ou d'autres activités comportant un risque pour la santé plus élevé. Une distance est toutefois prévue entre le point de rejet et le plan d'eau pour juger de l'impact.

> ***12VAC5-640-420. Setback distances from discharge points and downstream channels for the protection of public health.***
>
> ***A. Discharges proposed within one mile (upstream or up channel) of any public water intake shall not be permitted.***
>
> ***B. Discharges proposed within one mile upstream or up channel of any area explicitly designated for public swimming shall not be permitted.***
>
> ***C. When any river, stream, or other potential discharge area appears to receive significant primary contact use, such as, but not limited to, swimming, water skiing, tubing, or wetwading, so that the discharge will pose a significant threat to public health, the district healthdirector may require a higher level of treatment and reliability class for the permitted discharge facility.***

Le rejet vers un fossé, un cours d'eau intermittent ou un milieu humide doit respecter des normes de désinfection plus restrictives qu'au Québec mais n'incluant pas la déphosphatation. Il doit également faire l'objet d'une servitude de drainage.

> ***12VAC5-640-450. Design criteria for the use of intermittent streams, dry ditches, or wetlands.***
>
> ***[…]***
>
> ***3. Each discharging system that discharges to a dry ditch, intermittent stream, or wetland must receive additional treatment beyond that required by the General Permit in order to reduce the increased potential for public health problems which may result when partially treated effluent is not diluted. Such additional treatment shall be capable of producing an effluent with a quality of 10 mg/l of BOD5, 10 mg/l of suspended solids and a fecal coliform level of less than or equal to 100 colonies per 100 ml. Treatment units approved as TL-3 are recognized as having the ability to meet this BOD5 and TSS standard, but have not been tested for compliance with the fecal coliform standard. Therefore, the following reliability classifications in Table 3.2 must be met when designing discharge systems intended to discharge into dry ditches, intermittent streams, or wetlands.***

Cependant, selon l'article 12VAC5-613-90 du règlement 613, une norme de déphosphatation est spécifiquement prévue pour le bassin versant de la Baie de Chesapeake.

> ***12VAC5-613-90. Performance requirements; ground water protection.***
>
> ***D. The following additional nutrient requirements apply to all AOSSs in the Chesapeake Bay Watershed:***
>
> ***4. For direct dispersal of effluent to ground water in the Chesapeake Bay Watershed, TN concentration shall be less than or equal to 3 mg/l and total phosphorus concentration shall be less than or equal to 0.3 mg/l.***

Le règlement 640, spécifique aux rejets de surface, est l'un des plus élaborés rencontré dans le cadre de ce projet de recherche. Il contient plus de particularités qu'il est raisonnable d'en énumérer ici. Le texte intégral du règlement 640 est joint au présent chapitre.

11.5 CONTAMINANTS : Contaminants encadrés

Les documents consultés contiennent des dispositions sur les contaminants tels que : DBO5, MES, huile et graisse, azote, phosphore, etc.). Les concentrations des contaminants encadrés sont déterminées au règlement (article 12VAC5-610-120).

> ***"Secondary effluent" means effluent treated to reduce five-day biochemical oxygen demand to 30 mg/l or less, total suspended solids to 30 mg/l or less, and fats, oils, and grease to less than 5 mg/l.***
>
> ***"Septic tank effluent" means effluent characterized by a five-day biochemical oxygen demand between 120 and 200 mg/l; total suspended solids between 70 and 150 mg/l; fats, oils, and grease of 30 mg/l or less; and having no other toxic, hazardous, or constituents not routinely found in residential wastewater flows.***

Les systèmes de traitements avancés doivent répondre aux définitions ci-dessous (règlement 613, article 12VAC5-613-10).

> ***"Treatment level 2 effluent" or "TL-2 effluent" means secondary effluent as defined in 12VAC5-610-120 that has been treated to produce BOD5 and TSS concentrations equal to or less than 30 mg/l each.***
>
> ***"Treatment level 3 effluent" or "TL-3 effluent" means effluent that has been treated to produce BOD5 and TSS concentrations equal to or less than 10 mg/l each.***

Le point précédent illustrait la norme de rejet en lien avec le phosphore pour le milieu sensible de la Baie Chesapeake.

Les systèmes de traitement avancés avec rejet de surface sont assujettis à des paramètres supplémentaires d'évaluation des matières en suspension, coliformes fécaux, azote et de la turbidité. (règlement 613, article 12VAC5-613-90).

> ***12VAC5-613-90. Performance requirements; ground water protection.***
>
> ***C. AOSSs with direct dispersal of effluent to ground water are subject to the following requirements:***
>
> ***3. The treatment unit or system shall comply with the following at a minimum:***
>
> ***a. The effluent quality from the treatment unit or system shall be measured prior to the point of effluent application to the soil treatment area and shall be as follows: BOD5 and TSS concentrations each equal to or less than 5 mg/l; fecal coliform concentrations less than or equal to 2.2 col/100 ml as a geometric mean***

> ***with no sample exceeding 14 col/100 ml; and TN concentration of less than 5 mg/l;***
>
> ***b. High level disinfection is required; and***
>
> ***c. Treatment systems shall incorporate filtration capable of demonstrating compliance with an average turbidity of less than or equal to 2 NTU prior to disinfection.***

Un suivi des contaminants est requis après la mise en service et selon le type de certification reçu par le système. (règlement 613, article 12VAC5-613-100).

> ***"General approval" means that a treatment unit has been evaluated in accordance with the requirements of this chapter and 12VAC5-610 and approved for TL-2 or TL-3 in accordance with this chapter.***
>
> ***12VAC5-613-100. Performance requirements; laboratory sampling and monitoring.***
>
> ***[…]***
>
> ***D. The owner of each small AOSS must ensure that an initial grab sample of the effluent from the treatment unit is collected within 180 days of system operation. The sample must be analyzed in accordance with 40 CFR Part 136 or alternative methods approved by the U.S. Environmental Protection Agency within the first 180 days of operation. Thereafter, if the treatment unit has received general approval, a grab sample is required once every five years.***
>
> ***Samples shall be analyzed for BOD_5 and, if disinfection is required, fecal coliform. Treatment units utilizing chlorine disinfection may alternatively sample for TRC instead of fecal coliform. Sample results shall be submitted to the local health department by the 15th of the month following the month in which the sample was taken.***
>
> ***E. For small AOSSs that utilize a treatment unit that has not received general approval, in addition to the initial sample required by subsection D of this section, four additional grab samples of the effluent from the treatment unit shall be collected, analyzed, and submitted to the department within the first two years of operation and annually thereafter. The interval for collecting the samples shall not be less than quarterly or more than semiannually. Sample results shall be submitted to the local health department by the 15th of the month following the month in which the sample was taken. After two years of sampling in accordance with this subsection, the owner may submit a request to the department to reduce the sampling frequency to once every five years. The department shall grant such requests if the mean of five or more consecutive samples complies with the applicable performance requirements of this chapter.***

11.6 CERTIFICATION : Entité responsable d'effectuer la certification des différents intervenants et des technologies

L'État est responsable d'approuver la certification des différentes technologies de traitement. Les différents protocoles internationaux (NSF, BNQ, CSA, etc.) ne sont donc pas spécifiquement reconnus.

> ***12VAC5-613-70. General approval testing and evaluation.***
>
> ***The division shall develop a protocol to verify the expected performance of treatment units of small AOSSs that meet TL-2 or TL-3 effluent quality. The protocol to evaluate and test field performance of TL-3 treatment units shall include the following minimum requirements:***
>
> ***1. The manufacturer shall evaluate at least 20 treatment units installed in the Commonwealth of Virginia for single family residences occupied full-time, year-round throughout the testing and evaluation period;***
>
> ***2. The manufacturer shall provide the division with quarterly results of influent and effluent samples measuring, at a minimum, BOD and TSS for each installed treatment unit;***
>
> ***3. Operation and maintenance shall be performed on each treatment unit during the evaluation period in accordance with the provisions of this chapter; and***
>
> ***4. An independent third party with no stake in the outcome of the approval process shall oversee and administer the testing and evaluation protocol. Examples of an independent third party include faculty members in an appropriate program of an accredited college or university, a licensed professional engineer experienced in the field of environmental engineering, or a testing firm that is acceptable to the division.***

Les consultants en sols fournissant des « plans formels » requis à l'appui de certains types de systèmes doivent être des ingénieurs licenciés en vertu du Code de profession de l'État.

> ***12VAC5-610-250. Procedures for obtaining a construction permit for a sewage disposal system.***
>
> ***1. All formal plans for sewage disposal systems shall bear a suitable title showing the name of the owner and shall show the scale in feet, a graphical scale, the north point, date, and the name of the licensed professional engineer by or under whom prepared. The cover sheet and each plan sheet shall bear the same general title identifying the overall sewage disposal project and each shall be numbered. Appropriate subtitles should be included on the individual sheets.***

Les installateurs doivent être certifies et formés sous la responsabilité d'un comité « Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals ». La certification nécessite une formation de base de 20 heures et une preuve d'expérience de travail dans le domaine, ratifiée par un professionnel. Une procédure équivalente s'applique également aux tiers qualifiés pour effectuer des opérations de suivi des systèmes.

Il n'y a pas d'autre exigence de certification ou de qualification prévue dans les documents consultés.

11.7 CAPACITÉ : Capacité des fosses septiques

La capacité minimale exigée pour les fosses septiques est fixée selon le nombre de chambres à coucher. Selon notre compréhension il s'agit d'une capacité effective. Il n'y a pas d'autre critère de dimensionnement de fixé dans les règlements consultés. Les exigences règlementaires sont décrites à l'article 12VAC5-610-815 du règlement.

> ***12VAC5-610-815. Septic tank design.***
>
> ***A. Tank capacity. The minimum hydraulic detention time shall be 48 hours based on daily design flow. In no case shall the septic tank capacity be less than 750 gallons. Table 5.2***

Table 5.2.
Septic Tank Capacities for Dwelling Units.

No. of Bedrooms	Approximate Tank Volume in Gallons
1	750
2	750
3	900
4	1200
5	1500

11.8 VIDANGE : Encadrement de la vidange des fosses septiques

Il n'y a pas de disposition relative à la fréquence de vidange des fosses septiques dans les documents consultés. Toutefois, sur son site internet, l'État recommande de faire vidange une fosse septique tous les 3 à 5 ans[17].

> ***Pump outs are legally* required *in some localities. For example, pump outs are required no less frequently than every five years for systems located in Chesapeake Bay Preservation Areas (although some localities may accept an inspection report performed by a licensed or certified expert in lieu of a pump out). A "Chesapeake Bay Preservation Area" means any land designated by a local government as a Resource Protection Area (RPA) or a Resource Management Area (RMA). Contact your local government for maps of RPAs and RMAs in your community. Other localities or even homeowner associations may have requirements mandating the frequency of pump outs for septic tanks in certain sensitive areas such as near recreational waters or caves. As a homeowner, you are responsible for being aware of all such requirements.***

Le règlement 613 prévoit une obligation relative à l'émission d'un rapport lors de la vidange d'une fosse septique.

> ***12VAC5-613-130. Sludge and solids removal.***
>
> ***Any person who pumps or otherwise removes sludge or solids from any septic tank or treatment unit of an AOSS shall file a report with the appropriate local health department on a form approved by the division.***

Il n'y a pas d'autre exigence ou recommandation sur la vidange des fosses septiques.

[17] http://www.vdh.virginia.gov/environmental-health/onsite-sewage-system-owner-responsibilities/

11.9 SUIVI : Nécessité de faire le suivi des installations septiques

L'échantillonnage des systèmes de traitement est prévu selon leur statut de commercialisation. Une approbation générale limite l'échantillonnage à un échantillonnage dans les 180 jours de la mise en service et ensuite à tous les 5 ans. Si la technologie n'a pas encore reçu l'approbation de commercialisation générale, quatre échantillonnages supplémentaires sur deux ans sont également requis.

> ***12VAC5-613-100. Performance requirements; laboratory sampling and monitoring.***
>
> ***A. Laboratory sampling is not required for any small AOSS with an installed soil treatment area that is sized for septic tank effluent and complies with the requirements of 12VAC5-610 for septic tank effluent.***
>
> ***B. All effluent samples must be taken at the end of all treatment, prior to the point where the effluent is discharged to the soil treatment area unless changed pursuant to 12VAC5-613-90 or 12VAC5-613-210. The designer shall identify the sampling points. When required, the sampling point for chlorine disinfection shall be at the end of the chlorine contact tank if TRC is to be used to measure compliance.***
>
> ***C. All sampling and monitoring shall be conducted according to procedures approved under 40 CFR Part 136 or alternative methods approved by the U.S. Environmental Protection Agency unless other procedures have been specified in this chapter.***
>
> ***D. The owner of each small AOSS must ensure that an initial grab sample of the effluent from the treatment unit is collected within 180 days of system operation. The sample must be analyzed in accordance with 40 CFR Part 136 or alternative methods approved by the U.S. Environmental Protection Agency within the first 180 days of operation. Thereafter, if the treatment unit has received general approval, a grab sample is required once every five years. Samples shall be analyzed for BOD_5 and, if disinfection is required, fecal coliform. Treatment units utilizing chlorine disinfection may alternatively sample for TRC instead of fecal coliform. Sample results shall be submitted to the local health.***
>
> ***E. For small AOSSs that utilize a treatment unit that has not received general approval, in addition to the initial sample required by subsection D of this section, four additional grab samples of the effluent from the treatment unit shall be collected, analyzed, and submitted to the department within the first two years of operation and annually thereafter. The interval for collecting the samples shall not be less than quarterly or more than semiannually. Sample results shall be submitted to the local health department by the 15th of the month following the month in which the sample was taken. After two years of sampling in accordance with this subsection, the owner may submit a request to the department to reduce the sampling frequency to once every five years. The department shall grant such***

> ***requests if the mean of five or more consecutive samples complies with the applicable performance requirements of this chapter.***

Le suivi et l'échantillonnage des installations est prévu pour les systèmes avancés dont le débit de conception est supérieur à 1000 gallons/jour. La fréquence est prévue au tableau suivant mais le type de prélèvement à réaliser n'est pas déterminé.

> ***12VAC5-613-110. Performance requirements; field measurements, sampling, and observations.***
>
> ***A. For treatment units or treatment systems with flows greater than 1,000 GPD and less than or equal to 40,000 GPD, the following parameters shall be evaluated or tested when applicable: flow, pH, TRC, DO, odor, turbidity (visual), and settleable solids. [...]***

> ***12VAC5-613-150. Operator requirements for AOSS with flows up to 40,000 GPD, minimum frequency of visits.***
>
> ***The owner of each AOSS shall have that AOSS visited by an operator in accordance with Table***

Table 4
Minimum Operator Visit Frequency for AOSSs up to 40,000 GPD

Avg. Daily Flow	Initial Visit	Regular visits following initial visit
1,000 GPD	Within 180 calendar days of the issuance of the operationpermit	Every 12 months
>1,000 GPD to 10,000 GPD	First week of actual operation	Quarterly
>10,000 GPD to 40,000 GPD	First week of actual operation	Monthly

11.10 RESTRICTIONS : Restrictions quant à la localisation des installations septiques

Le règlement prévoit des distances à respecter pour les composantes étanches et non étanches d'une installation septique aux tableaux 4.1 et 4.2 reproduits ci-dessous.

Table 4.1.
Minimum Separation Distances for Pretreatment Units, Conveyance Lines, andHeader Lines.

Structure or Topographic Features	Minimum Horizontal Distance
Property Lines	5
Building Foundations	10
Basements	20
Drinking Water Wells (all classes)	50
Cisterns Bottom Elevation Lower than Ground Surface in Areaof Pretreatment Unit)	100
Shellfish Waters	70
Natural Lakes & Impounded Waters and Streams	50
Developed Springs (when the spring is down slope)	100
Drainage Ditches:	
Ditch Bottoms above Seasonal Water Table	10
Ditch Bottom below Seasonal Water Table and Ditch Normally Contains Water	50
Lateral Ground Water Movement Interceptor	50
Low Point of Sink Holes When Placed within the Bowl of the Sink Hole	100
Utility Lines	10

Table 4.2.
Minimum Separation Distances.

Structure or Topographic Features	Soil Texture Group	Minimum Distance (Ft) from Bottom or Sidewall of Subsurface Soil Absorption System Trench	
		Vertical	Horizontal
Property Lines	I, II, III, IV	-	5
Building Foundations	I, II, III, IV	-	10
Basements	I, II, III, IV	-	20
Drinking Water Wells		-	
Class IIIA or IIIB	I, II, III, IV	-	50
Class IIIC or IV	I, II, III, IV	-	100
Cisterns (Bottom Elevation Lower than Ground Surface in Areaof Subsurface Soil Absorption System)	I, II, III, IV	-	100

Shellfish Waters	I, II, III, IV	-	70
Natural Lakes & Impounded Waters	I, II, III, IV	-	50
Streams	I, II, III, IV	-	50a
Developed Springs (when the spring is down slope)	I, II, III, IV	-	200[e]
Rock and Rock Outcropping	I	2	2
Rock and Rock Outcropping	II, III, IV	1,5	1,5
Pans and Impervious Strata	I, II, III, IV	1,5	1,5
Drainage Ditches:		-	
Ditch Bottoms above Seasonal Water Table	I, II, III, IV	-	10
Ditch Bottom below Seasonal Water Table and Ditch Normally Contains Water	I	-	70a
	II	-	70a
	III	-	50a
	IV	-	50a
Water Table Depressor System	I	6b	70
	II	3b	70
	III	2b	50
	IV	2	50
Lateral Ground Water	I	-	70c 10d
Movement Interceptor	II	-	70c 10d
	III	-	50c 10d
	IV	-	50c 10d
Low Point of Sink Holes When Placed within the Bowl of the Sink Hole	I, II, III, IV	-	100
Utility Lines	I, II, III, IV	-	10

a The set back distance may be reduced to 10 feet in Group III and IV soils and 20 feet in Group I and II soils if thesubsurface soil absorption system is designed to produce unsaturated flow conditionin the soil.
b Vertical Distance to the invert of the draintile in the water table depressor system.
c Absorption trench up slope from interceptor.
d Absorption trench down slope from interceptor.
e Arc of 180 degree up slope of spring and 100 ft.down slope.

De plus, le règlement 613 prévoit aussi des distances pour les systèmes de traitement avancés (article 12VAC5-613-200).

> ***12VAC5-613-200. Horizontal setback requirements.***
>
> ***AOSSs designed pursuant to § 32.1-163.6 of the Code of Virginia are subject to the following horizontal setbacks that are necessary to protect public health and the environment:***

> ***1. The horizontal setback distances as found in 12VAC5-610 that apply to public and private drinking water sources of all types, including wells, springs, reservoirs, and other surface water sources, except that in cases where an existing sewage system is closer to a private drinking water source, the AOSS shall be no closer to the drinking water source than the existing sewage system;***
>
> ***2. The horizontal setback distances that apply to shellfish waters as found in 12VAC5-610;***
>
> ***3. The horizontal setback distances that apply to sink holes as found in 12VAC5-610;***
>
> ***4. A five foot horizontal separation to a wetland that is subject to permitting by the Virginia Department of Environmental Quality pursuant to the requirements of Title 62.1 of the Code of Virginia; and***
>
> ***5. Unless the AOSS complies with the ground water protection requirements of 12VAC5-613-90.C, a horizontal separation between the soil treatment area and any drainage trench or excavation that comes within six inches vertically of ground water shall be as follows:***
>
> ***a. AOSSs utilizing septic tank effluent shall be subject to a horizontal separation contained in 12VAC5-610;***
>
> ***b. AOSSs utilizing TL-2 or TL-3 (without disinfection) shall be subject to a horizontal separation of 20 feet; and***
>
> ***c. AOSSs utilizing TL-3 with disinfection shall be subject to a horizontal separation of 10 feet.***

Le règlement prévoit aussi une norme de distance relativement aux arbres (article 12VAC5-610-700).

> ***B. Removal of vegetation. Vegetation such as maple, cottonwood, willows and other plant species with extremely hydrophilic (water loving) root systems shall be removed for a minimum of 10 feet from the actual absorption areas. Other trees should be removed from the absorption area.***

L'article 12VAC5-610-770 contient aussi une norme de localisation entre la conduite d'amenée et un ouvrage de captage d'eau potable.

> ***12VAC5-610-770. Sewer construction.***
>
> ***A. Location. Sewers passing within 50 feet of a nonpublic drinking water supply well or other nonpublic drinking water supply source shall have special construction and pipe materials to provide adequate protection. Special***

> ***construction constitutes water pipe meeting AWWA specifications, pressure tested (10 feet of water) in place without leakage prior to backfilling.***
>
> ***However, under no circumstances shall a sewer come within 10 feet of a nonpublic drinking water supply source.***

Enfin, le règlement prévoit une norme de localisation pour une conduite de refoulement (après un poste de pompage) (article 12VAC5-610-880).

> ***5. Location. Force mains shall not pass closer than 50 feet to any drinking water source unless pressure tested in place at pump shut-off head. Under no circumstances shall a force main come within 10 feet of a nonpublic drinking water source.***

Il n'y a pas d'autre norme de localisation.

11.11 MILIEUX SENSIBLES :

Les lacs cours d'eau, milieux humides et arbres sont protégés par l'application des normes de localisation mentionnées au point précédent. L'article 12VAC5-610-593 du règlement prévoit aussi d'autres dispositions, entre autres, au sujet des milieux humides et des secteurs de fortes pentes.

> ***12VAC5-610-593. Physical features.***
>
> ***Physical features, landscape position and soil characteristics affect the ability of soil-based systems to treat and disperse effluent. In order to correctly select and place a sewage system in the environment such that public health and the environment are protected, it is necessary to understand and consider the local hydrologic conditions, the regional geology, and the nature of the soils occurring on the site being evaluated. At a minimum, the following features shall be considered:***
>
> ***1. Marshes and swamps. Placement of subsurface soil absorption systems on or in swamps and marshes is prohibited.***
>
> ***2. Seasonal water table. A vertical separation distance between the point of effluent application and a seasonal water table shall be maintained which reflects the quality of the effluent and the receiving environment. Minimum vertical separation distances may be found in Articles 2 (12VAC5-610-594 et seq.) and 3 (12VAC5-610-597 et seq.) of this part and Tables 4.3 and 4.4.***
>
> ***3. Slope. Subsurface soil absorption trench systems shall not be placed on slopes greater than 50% unless terraced. Criteria for other types of onsite systems are contained in Tables 4.3 and 4.4.***
>
> ***4. Drainage ways. Subsurface soil absorption systems shall not be placed at a position in a drainage way subject to intermittent flooding.***
>
> ***5. Fill material. Placement of subsurface soil absorption systems in fill materials is generally prohibited except in three specific situations. The Wisconsin Mound system is considered a fill system as is the sand-on-sand system. These systems are governed by criteria found in 12VAC5-610-960, 12VAC5-610-965, and Table 4.4. Fill material consisting of colluvial soil derived from sandstone (noncarbonaceous) in the mountainous area may be considered on a case-by-case basis for placement of subsurface soil absorption systems.***
>
> ***6. Sink holes. Placement of a subsurface soil absorption system at the low point of a sink hole is prohibited. For set back distance see Table 4.2.***
>
> ***7. Flood plains. Subsurface soil absorption systems shall not be placed in flood plains subject to annual or more frequent sustained (24 hours) flooding.***

> ***8. Alluvial and colluvial deposits. Placement of subsurface soil absorption areas in alluvial and colluvial deposits with shallow depths, extended periods of saturation, or possible flooding is prohibited.***
>
> ***9. Shrink-swell soils. When soils containing horizons with shrink-swell characteristics (see definitions in 12VAC5-610-120) have been identified, they shall be rejected for use for subsurface soil absorption systems.***
>
> ***10. Soil restrictions. Soil restrictions in themselves may form the basis for outright rejection of the site.***
>
> ***11. Free standing water. The presence of free standing water in a profile hole may be grounds for rejection of the site.***

Les milieux boisés sont protégés lors de la mise en place d'un système de traitement de type filtre à sable hors sol « Elevated sand mound » (article 12VAC5-610-960).

> ***5. Wooded sites shall not be used unless it is shown by the applicant that the wooded site is the only site available, and if the applicant can demonstrate that the site can be properly prepared (plowed). If a wooded site is used, trees shall be removed by cutting them off at ground level, leaving the stumps in place. The cut trees shall be removed using methods that do not require driving equipment over the mound site and that do not result in the removal of any soil from the site. Larger basal areas may be required on wooded sites.***

Il n'y a pas de norme de protection particulière relativement à un aquifère sensible.

D'autre part, tel que vu précédemment dans la section concernant les rejets de surface, le bassin versant de la Baie de Chesapeake est identifié comme un milieu sensible. À cet effet, elle fait l'objet de mesures de protection supplémentaires (azote) lors de la construction d'une installation septique.

> ***12VAC5-613-90. Performance requirements; ground water protection.***
>
> ***D. The following additional nutrient requirements apply to all AOSSs in the Chesapeake Bay Watershed:***
>
> ***1. All small AOSSs shall provide a 50% reduction of TN as compared to a conventional gravity drainfield system; compliance with this subdivision may be demonstrated through the following:***
>
> ***a. Compliance with one or more best management practices recognized by the division such as the use of a NSF 245 certified treatment; or***
>
> ***b. Relevant and necessary calculations provided to show one or both of the following:***

> ***(1) Effluent TN concentration of 20 mg/l measured prior to application to the soil dispersal field; or***
>
> ***(2) A mass loading of 4.5 lbs N or less per person per year at the project boundary provided that no reduction for N is allotted for uptake or denitrification for the dispersal of effluent below the root zone (>18 inches below the soil surface).***

Il n'y a pas d'autre mesure de protection en lien avec des milieux sensibles.

11.12 TOILETTES : Toilettes à compost, toilettes chimiques et toilettes à incinération

Le règlement encadre les toilettes alternatives. L'article 12VAC5-610-980 traite, notamment, des toilettes à incinération et des toilettes à compost.

> ***2. Incinerator toilets.***
>
> ***a. Description. Incinerator toilets are devices that utilize electrical energy or burning gas to incinerate human excreta deposited directly into them. They function both as toilet and disposal facility and produce an inert ash. Incinerator toilets are located in the interior of a dwelling.***
>
> ***b. Utilization. In addition to the conditions stated in subdivision 1 c of this subsection for pit privies, incinerator toilets shall not be utilized where they are subjected to frequent use and/or peak loading conditions.***
>
> ***c. Certification. All incinerator toilets must be certified by the National Sanitation Foundation as meeting the current Standard 41.***
>
> ***3. Composting toilets.***
>
> ***a. Description. Composting toilets are devices which incorporate an incline plane, baffles or other suitable devices onto which human excreta is deposited for the purpose of allowing aerobic decomposition of the excreta. The decomposing material is allowed to accumulate to form a humus type material. These units serve as both toilet and disposal devices. Composting toilets are located interior to a dwelling.***
>
> ***b. Utilization. In addition to the conditions stated in subdivision 1 c of this subsection for pit privies, all materials removed from a composting privy shall be buried. Compost material shall not be placed in vegetable gardens or on the ground surface.***
>
> ***c. Certification. All composting toilets must be certified by the National Sanitation Foundation as meeting the current Standard 41.***

Il n'y a aucune disposition qui traite des toilettes chimiques.

11.13 PERMÉABILITÉ DU SOL :

Le règlement classifie les sols principalement en fonction de leur texture et de leur structure. Il fournit également une équivalence en temps de percolation. Un sol de classe IV en Virginie, soit la plage moins perméable, correspond approximativement à la moitié de la zone peu perméable du triangle de corrélation utilisé dans la RETEURI. Toutefois, le règlement prévoit une charte de dimensionnement (article 12VAC5-610-950) pour des tranchées d'infiltration allant jusqu'à un temps de percolation de 120 min/pouce, soit 47 min/cm. Ce temps de percolation correspond environ à la limite d'un sol peu perméable dans le contexte du RETEURI.

> ***12VAC5-610-490. Characteristics of soils that determine suitability.***
>
> ***C. Permeability. The term permeability pertains to the characteristics of the soil that enable water or air to move through its pores. The permeability of a soil profile may be limited by the presence of one nearly impermeable horizon, even though the others are permeable.***
>
> ***1. Estimated rates. The soil classifications contained in subdivision B 1 of this section have been assigned the following estimated rates in minutes per inch for the purpose of design.***
>
> ***These rates may be modified when experience has shown that because of soil structure the texture group has a demonstrated rate different from that assigned.***
>
> ***a. Texture Group I—up to 16;***
>
> ***b. Texture Group IIa—17 to 30;***
>
> ***c. Texture Group IIb—31 to 45;***
>
> ***d. Texture Group III—46 to 90; and***
>
> ***e. Texture Group IV—equal to or greater than 91.***

Les solutions de traitement par infiltration dans le sol sont spécifiquement favorisées par rapport aux systèmes de traitement avancés avec un rejet en surface (règlement 640, article 12VAC5-640-30).

> ***D. The department will not consider issuance of a permit to construct a discharging system, unless all options for conventional and alternative onsite sewage treatment systems have been evaluated and found unsatisfactory in accordance with this section. For the purposes of this section, the consideration of all options means site evaluation(s) conducted by an individual licensed in Virginia to evaluate and design onsite sewage systems such as an onsite soil evaluator or professional engineer indicating that no sewage disposal site exists on that property for the site and soil conditions allowed under the Sewage Handling and Disposal Regulations (12VAC5-610) or its successor including the use***

> ***of TL-2 and TL-3 effluent to reduce footprint area as allowed under 12VAC5-613 or its successor. All evaluations must be completed in accordance with the methods and requirements of 12VAC5-610 and 12VAC5-613.***

L'utilisation de fosses de rétention n'est pas une solution durable et à long terme. Le règlement permet ce type de système pour des usages temporaires (évènements temporaires, chantiers de construction, etc.) (article 12VAC5-610-599).

> ***12VAC5-610-599. Permanent pumping and hauling.***
>
> ***Pumping and hauling on a permanent basis is prohibited unless done under the auspices and supervision of a government entity as provided for in 12VAC5-610-599.3 (see subdivision 2 of 12VAC5-610-410 for exception). Pumping and hauling for over one year shall be considered as a permanent pumping and hauling operation.***

Lorsque le sol est imperméable ou que les conditions des règlements ne peuvent pas toutes être respectées, le règlement propose deux alternatives. D'une part, le règlement 640 encadre, en détails, la possibilité d'installer un système de traitement avancé avec un rejet en surface. D'autre part, le règlement prévoit un processus de dérogation et accepte même, d'emblée, des assoupissements, surtout pour des situations existantes. Ci-dessous, deux exemples d'assouplissement prévus au règlement (article 12VAC5-610-70 et 12VAC5-610-280).

> ***12VAC5-610-70. Grandfather clause.***
>
> ***A. Any owner of a grandfathered lot may submit an application for a construction permit according to the procedure in 12VAC5-610-250. The local health department may perform a site and soil evaluation in accordance with Part III (12VAC5-610-450 et seq.) of this chapter and a permit shall be issued for a system which complies to the greatest extent possible with this chapter provided that the site and soil conditions would not preclude the successful operation of the system. Whenever the site and soil conditions on a grandfathered lot do not substantially comply with the requirements in Part IV (12VAC5-610-591 et seq.) of this chapter for a septic tank effluent system, secondary treatment will be required in the system design. In no case may the separation distance between the subsurface absorption system and a drinking water supply be less than the separation distance established in the regulations in effect at the time the grandfathered lot was approved (subdivision approval) or when the first permit was issued for the grandfathered lot.***

> ***12VAC5-610-280. Issuance of the construction permit.***
>
> ***(…)***
>
> ***C. Exception.***
>
> ***1. If compliance with the criteria contained in Part IV (12VAC5-610-591 et seq.) or Part V (12VAC5-610-660 et seq.) of this chapter imposes economic or other conditions that are not justified by the health considerations upon which the criteria are based, a construction permit may be issued for the disposal system design which substantially complies with the criteria set forth in Part IV or V of this chapter.***
>
> ***2. When issuing a construction permit for repair of an existing failing sewage disposal system for an occupied structure with indoor plumbing, the criteria contained in Parts IV and V of this chapter shall be complied with to the greatest extent possible. However, it is not necessary to substantially comply with all of the requirements in those parts of this chapter with the exception of the set back distances for shellfish waters or drinking water wells, unless the system is already closer in which case the corrected system shall not be closer than the existing system. Furthermore, when it can be documented that compliance with those parts creates an economic hardship, the district health director or the district environmental health manager may waive the requirements for pretreating the effluent. All corrections must be of such a nature that they can reasonably be expected to reduce the risk to public health caused by the malfunctioning systems.***

Un processus de dérogation est décrit à l'article 12VAC5-610-190.

> ***12VAC5-610-190. Variances.***
>
> ***The commissioner may grant a variance to this chapter; however, minor deviations to the criteria contained in Part IV (12VAC5-610-591 et seq.) or Part V (12VAC5-610-660 et seq.) of this chapter may be granted in accordance with 12VAC5-610-280 C. The commissioner shall follow the appropriate procedures set forth in this section in granting a variance.***
>
> ***A. Definition of a variance. A variance is a conditional waiver of a specific regulation which is granted to a specific owner relating to a specific situation or facility and may be for a specified time period.***
>
> ***B. Requirements for a variance. The commissioner may grant a variance if a thorough investigation reveals that the hardship imposed (may be economic) by this chapter outweighs the benefits that may be received by the public and that the granting of such variance does not subject the public to unreasonable health risks.***

> ***C. Application for a variance. Any owner who seeks a variance shall apply in writing for a variance. The application shall be sent to the appropriate district and local health department for review and forwarding to the commissioner. The application shall include:***
>
> ***1. A citation to the regulation from which a variance is requested;***
>
> ***2. The nature and duration of the variance requested;***
>
> ***3. Any relevant analytical results including results of relevant tests conducted pursuant to the requirements of this chapter;***
>
> ***4. The hardship imposed by the specific requirement of this chapter;***
>
> ***5. A statement of reasons why the public health and welfare would be better served if the variance were granted;***
>
> ***6. Suggested conditions that might be imposed on the granting of a variance that would limit the detrimental impact on the public health and welfare;***
>
> ***7. Other information, if any, believed pertinent by the applicant; and***
>
> ***8. Such other information as the local health department and the commissioner may require.***
>
> ***(…)***

Nous comprenons, qu'avec ces possibilités, il y a toujours une solution de compromis acceptable pour les autorités et pour les propriétaires.

11.14 FORTES CONTRAINTES : Solutions pour les sites à fortes contraintes

Dans les situations de forte contrainte (zone inondable ou en rive et littoral) les solutions possibles sont celles mentionnées au point précédent au sujet des possibilités de dérogation et d'assouplissement.

Pour ce qui est des cas ou la couche de sol est inférieure à 30 cm d'épaisseur, le règlement 613 propose la mise en place d'un système de traitement avancé avec désinfection « TL-3 and standard desinfection » avant de diriger l'effluent vers un système d'infiltration.

> ***12VAC5-613-80. Performance requirements; general. […]***
>
> ***13. The following minimum effluent quality shall be met for the described vertical separation to limiting feature as measured from the point of effluent application or the bottom of the trench or other excavation:***
>
> Table 2
> Minimum Effluent Requirements for Vertical Separation to Limiting Features
>
> | Vertical Separation | Minimum Effluent Quality |
> |---|---|
> | 18" (requires naturally occurring, undisturbedsoils) | Septic |
> | <18" to 12" (requires minimum 6" ofnaturally occurring, undisturbed soils) | TL-2 |
> | 0" to <12" | TL-3 and standard disinfection* |
>
> *Note: Where direct dispersal of effluent to ground wateroccurs, effluent quality shall be governed by 12VAC5-613-90 C.
>
> ***14. The designer shall specify methods and materials that will achieve the performance requirements of this chapter whenever sand, soil, or soil-like material is used to increase the vertical separation.***
>
> ***"Treatment level 2 effluent" or "TL-2 effluent" means secondary effluent as defined in 12VAC5-610-120 that has been treated to produce BOD5 and TSS concentrations equal to or less than 30 mg/l each.***
>
> ***"Treatment level 3 effluent" or "TL-3 effluent" means effluent that has been treated to produce BOD5 and TSS concentrations equal to or less than 10 mg/l each.***

Enfin, tel que mentionné précédemment, un mécanisme de dérogation est prévu pour permettre de solutionner les situations critiques.

11.15 ÉTUDES : Études préalables et mise aux normes

La procédure d'émission de permis est évolutive selon le type de projet en cause. Le contenu à fournir est ainsi modulé en fonction de la complexité de l'ouvrage projeté. Principalement, on note que certains types de systèmes plus rudimentaires ne nécessitent pas d'emblée l'intervention d'un professionnel qualifié. Ceux-ci doivent toutefois intervenir si la procédure impose le dépôt de « plans formels ».

> ***12VAC5-610-250. Procedures for obtaining a construction permit for a sewage disposal system.***
>
> ***A. Type I. A Type I sewage disposal system is an individual sewage disposal system incorporating a septic tank and subsurface soil absorption (septic tank-subsurface drainfield) serving a single residence. The submission of an application is all that is normally necessary to initiate procedure for obtaining a permit under this subsection. If after a site investigation, it is determined that pumping, enhanced flow distribution (see 12VAC5-610-930 A) or low pressure distribution (see 12VAC5-610-940) is necessary, the system shall be considered a Type II system.***
>
> ***B. Type II. A Type II sewage disposal system is a sewage disposal system incorporating a septic tank and subsurface soil absorption system which serves a commercial or other establishment, more than a single family dwelling unit, or where pumping, enhanced flow distribution (see 12VAC5-610-930 A) or low pressure distribution (see 12VAC5-610-940) is necessary. The procedure for obtaining a permit includes the following steps:***
>
> ***1. The submission of an application;***
>
> ***2. A preliminary conference as necessary; and***
>
> ***3. The submission of informal plans, specifications, design criteria, and other data, as may be required by the district or local health department. Depending on the size and complexity of the system, the submission of formal plans and specifications may be required.***
>
> ***C. Type III. A Type III sewage disposal system includes sewage disposal systems other than a septic tank subsurface soil absorption system, and subsurface soil absorption systems, regardless of design, with design flows greater than 1,000 gpd. The procedure for obtaining a permit under this subsection includes the following steps:***
>
> ***1. The submission of an application;***
>
> ***2. A preliminary conference; and***
>
> ***3. The submission of formal plans, specifications and design criteria. Other supporting data may be required on a case-by-case basis. When high strength wastes are proposed for subsurface disposal, the treatment methodology shall***

> ***comply with the requirements found in 12VAC5-580-10 et seq. of the Sewage Regulations.***
>
> ***D. Type IV-Privies. The submission of an application is all that is normally necessary to initiate the procedure for obtaining a permit under this section.***

La procédure de mises aux normes est applicable à la construction, la modification, l'agrandissement d'une installation après la date d'entrée en vigueur du règlement. Ce dernier n'est toutefois pas suffisamment spécifique pour couvrir explicitement les changements de vocation ou augmentation de débit du bâtiment. Une clause prévoit toutefois qu'une installation construite après l'entrée en vigueur du règlement doit respecter les conditions d'émission de son permis. On peut donc appliquer indirectement ce concept au sens relativement large.

> ***12VAC5-610-240. Permits; general.***
>
> ***No person or owner shall construct, operate, expand or modify a sewage disposal or handling system without a written permit from the commissioner.***
>
> ***A. Sewage disposal permits. No person or owner shall cause or allow the construction, expansion or modification of a sewage disposal system without the written construction permit from the commissioner which authorizes the construction or modifications. Furthermore, no person or owner shall cause or permit any sewage disposal system constructed after the effective date of this chapter to be operated without a written operation permit issued by the commissioner which authorizes the operation of the sewage disposal system, and/or nonpublic drinking water system (see 12VAC5-610-340). Conditions may be imposed on the issuance of any permit and no sewage disposal system shall be constructed, modified or operated in violation of these conditions.***

11.16 AUTRES :

Éléments du Q-2, r.22 qui sont couverts par le territoire visé

Définitions	X
Hiérarchie du choix d'un système	
Obligation de vidange des fosses septiques	
Méthodes pour établir la perméabilité du sol	X
Plages de perméabilité	X
Référence aux normes BNQ/NSF	
Normes de construction des fosses construites sur place	
Préfiltre	X
Norme spécifique au déboisement (élément épurateur classique)	
Conduite d'amenée, raccordements et ventilation	X
Champ d'application du Règlement/type d'eau	X
Prohibition de rejeter des eaux usées	X
Interdiction d'utiliser certains produits (désinfection de ces eaux usées)	
Conditions d'émission des permis (plan, études, etc.)	X
Implication d'un professionnel compétent pour la conception (Ordre professionnels)	X
Désaffectation des systèmes	
Gestion des boues et des autres résidus	X
Cheminement des eaux et des effluents	
Normes de localisation pour les systèmes étanches et les systèmes non étanches	X
Normes techniques à respecter (matériaux, dimensions, etc.)	X
Conditions d'implantation des systèmes (pente, perméabilité, épaisseur de sol naturel, etc.)	X
Obligation d'entretien et/ou de maintenir un contrat d'entretien des systèmes certifiés	X
Normes de rejet des systèmes	X
Systèmes spécifiquement pour des résidences/bâtiments existants	
Toilettes à compost	X
Cabinet/toilettes sèches	X
Solutions si ségrégation des eaux (toilettes vs eaux ménagères) (ex : vidange périodique)	
Déclencheurs/droits acquis pour la mise aux normes de systèmes existants	X
Dispositions encadrant les rejets au fossé/cours d'eau	X
Déphosphatation	X
Désinfection	X
Méthodes de prélèvement et d'analyse des rejets des systèmes	
Définit la responsabilité des municipalités pour l'application du Règlement	X
Amendes/infractions	
Dispositions applicables à des territoires particuliers (Basse-Côte-Nord Iles-de-la-Madeleine, etc.)	X

Éléments couverts par le territoire visé et qui ne sont pas traités dans le Q-2, r.22

- Procédure de dérogation
- « Champ de polissage » sur remblai sous certaines conditions
- Distance séparatrices modulées selon le type de sol
- Encadrement des postes de pompage
- Procédure de permis modulé selon le type de système
- Raccordement de fosses septiques en série au besoin

ANNEXES Virginie:

Voir le document électronique: Alternative Discharging Sewage Treatment Regulations for Individual Single Family Dwellings

SOURCES Virginie:

1. *Virginia Administrative Code, Title 12. Health, Agency 5. Department of Health, Chapter 610, Sewage handling and Disposal Regulations*
2. *Virginia Administrative Code, Title 12. Health, Agency 5. Department of Health, Chapter 613, Regulations for Alternative Onsite Sewage Systems*
3. *Virginia Administrative Code, Title 12. Health, Agency 5. Department of Health, Chapter 640. Alternative Discharging Sewage Treatment Regulations for Individual Single Family Dwellings*
4. *Site internet du Virginia Department of Health, http://www.vdh.virginia.gov/environmental-health/onsite-sewage-system-owner-responsibilities/*

12.0 VIRGINIE OCCIDENTALE

12.1 ENCADREMENT :

L'encadrement de l'évacuation et du traitement des eaux usées des résidences isolées est sous la responsabilité du département de la Santé et des Ressources Humaines en Virginie Occidentale « West Virginia Department of Health and Human Resources ». Deux parties du chapitre 16 de la Loi générale de l'État « West Virginia Code: Chapter 16 - Public Health » sont plus pertinentes au présent projet de recherche.

- Le « Title 64, Series 47, Individual and on-site sewage systems », ci-après le règlement. Ce règlement est à jour en date du 1er juillet 2003.
- Le « Title 64, Series 9, Sewer Systems, Sewage Treatment Systems and Sewage Tank Cleaners » encadre quant à lui le processus de certification de différents intervenants et est à jour en date de 1998.

En Virginie Occidentale, il y a seulement un type d'encadrement qui est en place sans limite de débit journalier. Cependant, sont considérées d'ordre public selon règlement les installations traitant des débits journaliers excédant 1 000 gallons (3785 L/jour) avec infiltration ou excédants 600 gallons (2271 L/jour) avec rejet de surface.

> ***2.12. Individual Sewer System. -- A system with a daily design flow not to exceed one thousand (1,000) gallons per day with subsurface discharge or not to exceed six hundred (600) gallons per day design flow with surface discharge. A single entity owns and performs maintenance of the system.***
>
> ***2.17. Public Sewer System. -- A sewage collection system or systems, including municipal sewer systems. with or without treatment facilities, with a daily design flow greater than one thousand (1000) gallons per day with subsurface discharge or greater than six hundred (600) gallons per day with surface discharge, serving one (1) or more dwellings or establishments. A single entity owns and performs maintenance on the system.***

Un chapitre du règlement est plus spécifiquement consacré aux installations septiques individuelles.

> ***§64-47-61. Individual Sewage Systems.***
>
> ***61.1 General. The design standards apply to the site requirements, design, construction, and maintenance of individual sewage treatment systems including septic tank soil absorption systems with standard soil absorption fields; serial distribution soil absorption fields; soil absorption beds; shallow soil absorption fields; mound systems; home aeration units; effluent disposal ponds; composting***

> ***toilets; grey water disposal systems; holding tanks; privies; recycle systems; and any other systems that provide waste treatment and disposal for individual dwellings and commercial establishments.***

Enfin, l'application du règlement relève des bureaux de la santé publique.

> ***§64-47-1. General.***
>
> ***1.7. Enforcement. -- This rule is enforced by the Commissioner of the Bureau for Public Health or his or her designee.***

12.2 TYPE D'EAU : Types d'eau visés par l'encadrement

Le règlement s'applique aux eaux de nature domestique autant qu'à celles à charges élevées. Par contre, dans un tel cas, les eaux doivent subir un pré-traitement avant le rejet dans l'environnement. Selon les chapitres, le même règlement englobe des dispositions pour tout type de traitement d'eau même industrielles et municipales.

> ***§64-47-2. Definitions.***
>
> ***2.18 Sewage. -- Excreta or liquid waste containing animal or vegetable matter in suspension or solution including, but not limited to, waste from commodes, urinals, lavatories, bathtubs, laundry tubs, washing machines, drinking fountains, sinks, kitchen equipment, and other sanitary fixtures or facilities.***

> ***§64-47-10. Grease Traps.***
>
> ***10.1. There shall be grease traps for all restaurants and similar establishments where a large quantity of grease and fats in liquid wastes will occur.***
>
> ***10.2. The location of the external grease trap shall be within thirty (30) feet from the fixtures served. If meeting this distance requirement is not possible and thus, external grease traps are not possible due to existing conditions or physical limitations, the Commissioner may allow internal grease traps.***
>
> ***10.3. Only those plumbing fixtures into which the grease and fats are discharging shall connect to the grease trap.***
>
> ***10.4. The external grease trap shall be a minimum one hundred fifty (150) gallons capacity. Larger grease traps may be a requirement depending upon the loading.***
>
> ***10.5. The external grease trap shall be in an easily accessible place outside the building served.***

Le règlement ne prévoit pas de distinction dans le type d'établissement d'où proviennent les eaux.

12.3 DENSITÉ MAXIMALE : Densité maximale des installations septiques

La densité des installations septiques est encadrée par l'établissement de normes de lotissements incluse au « Title 64. Serie 9, Sewer Systems, Sewage Treatment Systems and Sewage Tank Cleaners ». Selon ces dispositions, les parties de terrain comportant des contraintes de sol sévères sont soustraites du calcul de la superficie minimale du lot. Un terrain comportant d'importantes contraintes de sol devrait donc être plus grand.

> ***§64-9-8. Subdivisions.***
>
> ***8.1. All subdivisions or housing developments originating after July 1, 1970, the effective date of the original regulations, shall be served by a method of sewage disposal approved by the director.***
>
> ***[….]***
>
> ***8.5. In instances where a lot was purchased or acquired for dwelling construction, and either its deed was recorded prior to July 1, 1970, or the lot was laid out, described and designated on a map of a subdivision, which map was recorded prior to July 1, 1970 and where a public water supply system is available, but a public sewer system is not available, no individual sewer system is permissible on any lot, site or area containing less than ten thousand (10,000) square feet.***
>
> ***8.6. In instances where a lot was purchased or acquired for dwelling construction, and, either its deed was recorded prior to July 1, 1970 or the lot was laid out, described and designated on a map of a subdivision, which map was recorded prior to July 1, 1970 and where neither a public sewer system nor a public water supply system is available, no individual sewer system is permissible on any lot, site or area containing less than twenty thousand (20,000) square feet.***
>
> ***8.7. The director may waive the square footage requirements stipulated in Subsections 8.5 or 8.6 of this rule if he or she has been petitioned and has ascertained through a hearing, an on-site inspection, percolation tests and other requirements of this rule that an individual sewer system can be expected to function satisfactorily on a lot, site, or area containing less than the minimum prescribed number of square feet.***
>
> ***[…]***
>
> ***8.9.a. All lots less than two (2) acres in total surface area or lots with an average frontage of less than one hundred and fifty (150) feet) shall contain a minimum on-site disposal area of ten thousand (10,000) square feet, which shall be set aside for the installation of standard soil absorption system(s). No development or structures are permissible on this on-site disposal area other than those comprising the individual sewer system(s). The layout of each reserve area shall be such that ten thousand (10,000) square feet is usable for the installation of standard soil absorption system(s). Where multiple reserve areas are used, each shall be three thousand (3,000) square feet or more in size.***

> ***8.9.b. Area consisting of land sloping in excess of twenty-five percent (25%), or land in an existing or proposed public road may not be utilized in establishing the minimum area for lots in accordance with the requirements of Subsection 8.9.a of this rule.***
>
> ***8.9.c. Area consisting of land containing rock strata or seasonal high water table within five (5) feet of the ground surface may not be utilized in establishing the minimum area for lots in accordance with the requirements of Subsection 8.9.a of this rule. Area consisting of land not in compliance with the minimum separation distances listed in Sewage Treatment and Collection System Design Standards, 64 CSR 47, may not be utilized in establishing the minimum area for lots in accordance with the requirements of Subsection 8.9.a of this rule.***
>
> ***8.9.d. Area consisting of land which has been determined through testing to have a percolation rate slower than ninety (90) minutes per inch shall not be utilized in establishing the minimum area for lots in accordance with the requirements of Subsection 8.9.a of this rule.***
>
> ***8.9.e. Area where routine seasonal flooding occurs may not be utilized in establishing the minimum area for lots in accordance with the requirements of Subsection 8.9.a of this rule unless approved by the director.***
>
> ***8.9.f. All lots two (2) acres and over shall contain a minimum on-site disposal area of ten thousand (10,000) square feet, which shall be set aside for the installation of standard or alternative soil absorption system(s). No development or structures are permissible on this on-site disposal area other than those comprising the individual sewer system(s). The layout of each reserve area shall be such that ten thousand (10,000) square feet is usable for the installation of standard or alternative soil absorption system(s). Where multiple reserve areas are used, such areas shall be three thousand (3,000) square feet or more in size.***
>
> ***8.9.g. Alternative systems which may be considered for new construction on lots two (2) acres and over include low pressure systems, mound systems, shallow and elevated soil absorption systems, experimental systems, and unique systems designed for specific situations.***

La règlementation n'intègre toutefois aucune disposition spécifique à l'impact cumulatif des rejets d'eaux usées dans le contexte d'une densité importante d'installations.

12.4 REJETS : Rejets en surface

Les rejets en surface sont permis et encadrés aux articles 6.10 et 6.12 du règlement. Les critères sont différents selon que la résidence est existante ou nouvelle.

> ***6.10. Individual Sewage Systems with Surface Water Discharge.***
>
> ***6.10.a. Individual systems with surface water discharge may receive consideration for approval under the following conditions:***
>
> ***6.10.a.1. To correct existing failures when other means of treatment and disposal have proven ineffective; and***
>
> ***6.10.a.2. On lots greater than two (2) acres in size that cannot qualify for standard or shallow soil absorption systems. All mechanical systems with surface water discharge shall have a perpetual maintenance agreement as approved by the Commissioner.***

> ***6.12 Intermittent Surface Sand Filters.***
>
> ***6.12.a. Effluent from a home aeration unit may discharge to intermittent surface sand filters.***
>
> ***6.12.b. Effluent from a surface sand filter may discharge to a stream after disinfection in accordance with the regulations and requirements pertaining to surface discharge of waste water.***
>
> ***6.12.c. The design of intermittent surface sand filters preceded by a home aeration unit shall be on a filtration rate of ten (10) gallons per day per square foot. There shall be two (2) filters of design size to provide for alternation of operation.***
>
> ***6.12.d. Intermittent surface sand filters serving individual sewage systems shall have an insulated cover.***
>
> ***6.12.e. The intermittent surface sand filter shall receive dosing by either a pump or sewage siphon.***

12.5 CONTAMINANTS : Contaminants encadrés

La section du règlement relative aux installations individuelles ne fixe aucun seuil des différents contaminants (DBO5, MES, coliformes fécaux, azote ou phosphore).

Le règlement général parle de traitement secondaire lorsque des paramètres de DBO5 et MES sont respectés mais dans le cadre de dispositions en liens avec des ouvrages de traitement de gros volumes.

> ***5.19.d. Design.***
>
> ***5.19.d.1. Effluent Requirements. Secondary treatment shall be a requirement (30 mg/1 of BOD_5 and 30 mg/1 of suspended solids). Disinfection shall be a requirement with disinfection occurring after secondary treatment.***

Les dispositions applicables aux installations septiques individuelles sont peu élaborées sur cet aspect. Nous comprenons que, dans une telle situation, l'autorité responsable de l'émission du permis doit se référer à de la littérature d'autres juridictions ou de standard internationaux. Ceci-dit, les documents ne contiennent pas de précisions à cet effet.

12.6 CERTIFICATION : Entité responsable d'effectuer la certification des différents intervenants et des technologies

Les installateurs et vidangeurs doivent être certifiés conformément à un règlement spécifique.

> ***TITLE 64, SERIES 9 SEWER SYSTEMS SEWAGE TREATMENT SYSTEMS AND SEWAGE TANK CLEANERS***
>
> ***§64-9-11. Individual Sewer Systems Installers Certification. 11.1. Except as provided in Subsection 11.2 of this rule, all individual or on-site sewer system installers shall be certified by the director. An individual shall be a minimum of eighteen (18) years old to qualify for certification.***
>
> ***[…]***
>
> ***11.7. In addition to filing an application for certification as an individual sewer system installer, the applicant shall pass a written examination for each classification and shall be required to demonstrate that he or she possesses adequate knowledge and skill in making installations in accordance with Sewage Treatment and Collection System Design Standards, 64 CSR 47.***
>
> ***11.8. Written examinations shall be administered by the director at a site and on a date designated by the director. An applicant shall attain a passing grade of seventy percent (70%) to qualify for certification. Any applicant who has failed an examination shall wait thirty (30) days before reexamination.***

> ***§64-9-10. Sewage Tank Cleaning. 10.1. No person shall engage in the business of collecting, removing, transporting, or disposing of the contents of a sewage tank without first obtaining in the county in which the business is located a state-wide permit for the activity from the director, in accordance with Section 6 of this rule. Out of state sewage tank cleaners shall obtain the permit from the county where most of their business is located.***

Les consultants en sols ne doivent pas posséder de certification obligatoire. Par contre, leurs qualifications et compétences doivent être satisfaisantes pour les autorités.

> ***§64-9-5. Construction and Installation Requirements.***
>
> ***5.3. Percolation tests and other tests, as may be required for installation of a sewer system, shall be performed by persons whose qualifications are acceptable to the director and the tests shall be conducted in accordance with Sewage Treatment and Collection System Design Standards, 64 CSR 47. The person conducting the tests shall certify the accuracy of the results of the tests and the information shall be submitted in a form acceptable to the director.***

Le règlement n'établit pas de processus de certification des technologies de traitement. L'encadrement des solutions technologiques est limité et majoritairement axé sur les installations aérées. L'approbation de systèmes alternatifs repose avant tout sur l'évaluation de l'État selon les contraintes du site mais non selon des paramètres clairement définis.

> ***§64-47-6. Individual Sewage Systems.***
>
> ***6.20. Alternative and Experimental Sewer Systems.***
>
> ***6.20.a. The construction of alternative and experimental sewer systems may be where there is a suitable layer of soil, sufficient area and the natural slope is not excessive.***
>
> ***6.20.b. Alternative soil absorption systems presently approved for use are: shallow fields, soil absorption mounds, shallow beds, low pressure pipe systems, elevated fields, evapotranspiration systems and unique systems designed for specific situations.***

L'utilisation de systèmes de traitement avancés est réservée à des cas d'exception qui ne peuvent pas se prévaloir des solutions de base prévues au règlement.

> ***§64-9-9. Correction of Health Hazards.***
>
> ***9.1. To correct or abate public health hazards resulting from the malfunctioning of individual sewer systems, and public sewer systems which hazards are not correctable by methods set forth in Sewage Treatment and Collection System Design Standards, 64 CSR 47, the director may permit the installation of an experimental or nonstandard sewer system upon written petition for the system.***
>
> ***9.2. The petition shall request the director to authorize installation of the system desired and shall contain information as to the location, reasons why a conventional system cannot be installed, information concerning the malfunctioning system, and information concerning the system desired. The director may request additional information which may include a meeting with the petitioner.***
>
> ***9.3. If the director determines that a potential public health hazard exists, he or she may issue a written approval authorizing installation of the system desired. The written approval shall apply only to the petitioner and the facts presented at the meeting.***

12.7 CAPACITÉ : Capacité des fosses septiques

La capacité effective « Liquid capacities » minimale exigée pour les fosses septiques selon le nombre de chambres à coucher, le débit de conception ou tout autre critère indiqué est décrite dans l'article ci-dessous. Ce sont des exigences règlementaires (Article 64-47-6.4, INDIVIDUAL AND ON-SITE SEWAGE SYSTEMS).

> ***6.4. Septic Tanks.***
>
> ***6.4.a. Liquid capacities for tanks serving single-family dwellings shall be in accordance with the following:***
>
> ***6.4.a.1. For four (4) or less bedrooms, the minimum tank capacity shall be one thousand (1,000) gallons; and***
>
> ***6.4.a.2. For each additional bedroom, the minimum tank capacity shall be two hundred fifty (250) gallons per bedroom.***
>
> ***6.4.b. When using a dual compartment tank or dual tanks, the volume ratio of the first compartment or tank to the second compartment or tank shall approximate two (2) to one (1). In a dual compartment tank, the connection between compartments shall be an elbow with a minimum diameter of four (4) inches, placed so that the invert at the partition is approximately sixteen (16) inches below the liquid level.***

12.8 VIDANGE : Encadrement de la vidange des fosses septiques

En Virginie Occidentale, le propriétaire doit avoir un contrat d'entretien de la fosse septique avec un vidangeur accrédité pour le faire. C'est le propriétaire qui est responsable des suivis à faire pour la vidange de son installation septique. Le règlement ne prévoit pas la fréquence de vidange ni d'adaptation en fonction du caractère permanent ou saisonnier de l'occupation.

> ***6.4. Septic Tanks.***
>
> ***6.19.h. A contract with a licensed sewage tank cleaner with a valid permit for pumping and maintenance of the tank on a regular schedule shall be required.***

Le règlement certifiant les compagnies de vidange établit que celles-ci doivent conserver un registre de toutes leurs opérations.

> ***§64-9-10. Sewage Tank Cleaning.***
>
> ***10.9. All sewage tank cleaners shall keep a written record of all jobs accomplished. The record shall be on a form prescribed by the director and submitted to the director quarterly.***

12.9 SUIVI : Nécessité de faire le suivi des installations septiques

Certains types de systèmes doivent obligatoirement faire l'objet d'un suivi selon des modalités fixées par le fonctionnaire désigné mais non par le règlement. C'est le cas notamment des systèmes aérés et de tout système avec rejet de surface.

> ***§64-9-7. Maintenance and Operation of Sewer Systems, and Sewage Treatment or Sewage Disposal Systems.***
>
> ***7.2. All mechanical sewer systems with surface discharge and all mechanical sewer systems where additional treatment is required for subsurface discharge shall have a perpetual maintenance program approved by the director.***

Les documents consultés ne contiennent pas de disposition relative à un relevé sanitaire ou une autre forme d'inventaire ou de suivi.

12.10 RESTRICTIONS : Restrictions quant à la localisation des installations septiques

Les dégagements requis pour une fosse septique sont intégrés dans le texte du règlement.

> ***§64-47-6. Individual Sewage Systems.***
>
> ***6.2 General Site Requirements.***
>
> ***[…]***
>
> ***6.2.b. No part of an individual sewage system location shall be within ten (10) feet of a building, foundation or property line.***
>
> ***6.2.c. No part of an individual sewage system location shall be within twenty-five (25) feet of a public water supply line, or within ten (10) feet of a private water supply line.***
>
> ***6.2.d. The Commissioner shall determine the distance between a septic tank, home aeration unit, vault privy, or other sewage tank, and a public water system well or water supply.***
>
> ***6.2.e. The location of a septic tank, home aeration unit, vault privy, or other sewage tank shall be at least fifty (50) feet from a private water well or groundwater supply.***
>
> ***[…]***
>
> ***6.2.h. The location of a septic tank or other treatment unit or disposal field shall not be under area to be paved, parking lots, driving surfaces, or any type of structure.***

Les normes de localisation des composants non étanches sont prévues au tableau suivant. (Table 64-47-k, INDIVIDUAL AND ON-SITE SEWAGE SYSTEMS).

TABLE 64-47-K Minimum Horizontal Separation Distances Between Soil Absorption Systems and Natural and Manmade Features	
Distance	Feature
10 feet	Foundation drain upslope from disposal area.
20 feet	Stream banks and open drainage features, whether manmade or natural.
20 feet	Manmade cuts in soil and curtain drains.
20 feet	Foundation drains downslope from disposal area.
50 feet	Manmade cuts that intersect rock or shale.
100 feet	Water supply springs and water supply wells.
50 feet	Water Supply Cistern

Il n'y a pas d'autre norme de localisation.

12.11 MILIEUX SENSIBLES :

La prise en compte des sites en forte pente est réglementée.

> ***6.5.h.11.B. The construction of soil absorption systems shall not be on ground with a slope in excess of twenty-five percent (25%)***

Outre les normes de localisations mentionnées au point précédent, le règlement ne prévoit pas de mesures supplémentaires de protection relativement aux milieux sensibles (milieux humides, boisés, aquifère particulier, etc.).

12.12 TOILETTES : Toilettes à compost, toilettes chimiques et toilettes à incinération

Le règlement encadre les toilettes alternatives (compost, chimiques, incinération, etc.) aux articles 6.13, 6.14, 6.17 et 6.18, ci-dessous.

> ***6.13. Composting Toilets.***
>
> ***6.13.a. Utilization of composting toilets may be only in conjunction with an approved grey water treatment and disposal system.***
>
> ***6.13.b. The design and construction of a composting toilet shall meet the requirements of NSF Standard 41.***

> ***6.14. Incinerating and Chemical Toilets.***
>
> ***6.14.a. Use of incinerating and chemical toilets may be only in conjunction with an approved grey water disposal system.***
>
> ***6.14.b. The design, construction, and application of incinerating or chemical toilets shall receive approval by the Commissioner. The use of chemical or incinerating toilets may receive approval by the Commissioner in emergency situations, temporary usage situations, or for recreational residences, or isolated residences.***

> ***6.17. Recirculating Toilets.***
>
> ***6.17.a. Recirculating toilets and the piping for the toilets shall be separate from and not connected to the potable water system of any residence or other structure under any circumstances. There shall be color coded pipe used to facilitate inspection and maintenance of the installations.***
>
> ***6.17.b. Recirculating toilets shall:***
>
> ***6.17.b.1. Be installed and operated in accordance with the manufacturer's instructions; and***
>
> ***6.17.b.2. Be approved by the Commissioner before installation.***

> ***6.18. Self-Contained Excreta Disposal Systems.***
>
> ***6.18.a. The design of self-contained excreta disposal systems shall be so as to prevent flies, rats, and wild or domestic animals from having access to the contents thereof.***

6.18.b. The construction of all fixtures, tanks, or receptacles shall be of impervious, easily cleanable material.

6.18.c. Tanks and receptacles shall:

6.18.c.1. Be watertight and vented to the outside air;

6.18.c.2. Be constantly supplied with sufficient amounts of an approved chemical agent to process and deodorize the contents thereof; and

6.18.c.3. Have the contents removed and the tank or receptacle thoroughly cleaned as often as necessary to prevent creating a nuisance, or an unsanitary condition.

12.13 PERMÉABILITÉ DU SOL :

La perméabilité du sol est déterminée en fonction du taux de percolation. Selon les tableaux ci-dessous, l'implantation d'un système de traitement par infiltration dans le sol ayant un taux de percolation supérieur à 5 min/po (2 min/cm) ou supérieur à 60 min/po (24 min/cm) est soumise à des exigences particulières. Il peut donc, en théorie et à certaines conditions déterminées par les autorités, être possible d'implanter un système de traitement, peu importe la perméabilité du sol.

TABLE 64-47-L **Standard Septic Tank Soil Absorption System** **Sizing for Single-Family Dwellings**	
Percolation Test Results (Average Time in Minutes Required for Water to Fall 1 Inch)	Minimum Area of Soil Absorption System (Square Feet per Bedroom)
Less than 5 minutes	Consult with local health department
5 - 30 minutes	300
31 - 60 minutes	400
over 60 minutes	Consult with local health department

TABLE 64-47-M **Single Absorption System Sizing for** **Establishment Other than Single-Family Dwelling**	
Percolation Test Results	Square Feet Per 1000 Gallons Sewage Per Day
Less than 5 minutes	Consult with your local health department
5 - 10 minutes	1650
11 - 30 minutes	2500
31 - 45 minutes	2950
46 - 60 minutes	3300
Over 60 minutes	Consult with your local health department

L'article 6.19 du règlement contient certaines dispositions relatives aux fosses de rétention. Selon l'article 6.19a, contrairement à la majorité des territoires (pays, états, provinces), en Virginie Occidentale, l'utilisation d'une fosse de rétention est possible pour une nouvelle résidence seulement.

> ***6.19. Sewage Holding Tanks.***
>
> ***6.19.a. The approval of sewage holding tanks shall only be for new construction after a contract awarded for the development of a public or private sewage***

> ***collection system or treatment facility, or both, to serve the proposed new construction.***

Les systèmes comportant un rejet en surface sont autorisés et son soumis aux conditions des l'article 6.10 du règlement. Selon cet article, ce type de système est une solution en dernier recours.

> ***6.10. Individual Sewage Systems with Surface Water Discharge.***
>
> ***6.10.a. Individual systems with surface water discharge may receive consideration for approval under the following conditions:***
>
> ***6.10.a.1. To correct existing failures when other means of treatment and disposal have proven ineffective; and***
>
> ***6.10.a.2. On lots greater than two (2) acres in size that cannot qualify for standard or shallow soil absorption systems. All mechanical systems with surface water discharge shall have a perpetual maintenance agreement as approved by the Commissioner.***

En plus des systèmes de traitement avancés, le règlement permet la construction de systèmes de type filtre à sable classique « Intermittent Surface Sand Filters » avec un rejet en surface.

> ***6.12 Intermittent Surface Sand Filters.***
>
> ***6.12.a. Effluent from a home aeration unit may discharge to intermittent surface sand filters.***
>
> ***6.12.b. Effluent from a surface sand filter may discharge to a stream after disinfection in accordance with the regulations and requirements pertaining to surface discharge of waste water.***
>
> ***6.12.c. The design of intermittent surface sand filters preceded by a home aeration unit shall be on a filtration rate of ten (10) gallons per day per square foot. There shall be two (2) filters of design size to provide for alternation of operation.***
>
> ***6.12.d. Intermittent surface sand filters serving individual sewage systems shall have an insulated cover.***
>
> ***6.12.e. The intermittent surface sand filter shall receive dosing by either a pump or sewage siphon.***

12.14 FORTES CONTRAINTES : Solutions pour les sites à fortes contraintes

Le règlement ne contient pas de disposition spécifique relative aux zones de contraintes telles que : zone inondable, milieu riverain, ou terrain avec une faible épaisseur de sol à l'exception des restrictions de lotissement énumérées à la section 3. Nous comprenons que des situations contraignantes sur des lots déjà lotis, les alternatives mentionnées au point précédent sont appliquées. Notamment les sols réputés peu perméables et imperméables (60 min/pouce) ou trop perméables (5min/pouce) doivent faire l'objet d'une évaluation spécifique du département de la santé. D'autre part, le règlement permet l'utilisation de matériel de remblai. Dans ce cas, les autorités doivent autoriser le projet au cas par cas.

> ***§64-47-6. Individual Sewage Systems.***
>
> ***6.2 General Site Requirements.***
>
> ***6.2.a. The location of an individual sewage system shall not be in a poorly drained or filled area, or in any area where seasonal flooding occurs, without the prior written approval of the Commissioner. There may be exceptions if the construction of the fill area has been in accordance with directions of the Commissioner, or if an applicant provided evidence to the Commissioner that the fill area is suitable and of acceptable composition.***

12.15 ÉTUDES : Études préalables et mise aux normes

Les études requises avant l'implantation des installations septiques et les éléments qui doivent faire partie de la demande de permis sont énumérés aux articles qui suivent.

> ***§64-47-6. Individual Sewage Systems.***
>
> ***6.3. Site Evaluation.***
>
> ***6.3.a. The evaluation of a site for the installation of a soil absorption system, including absorption fields, serial systems, absorption beds, and others, shall include but not be limited to, percolation test results and evaluation of soils in a six (6) foot excavation. Percolation tests shall be performed according to the following:***
>
> ***6.3.a.1. A minimum of four (4) test holes shall be placed at equal distances over the entire absorption field site. If the results of the tests are reasonably close, it shall be considered an average test result. If the tests results show extreme variations, it may be considered necessary to relocate the field in a more suitable area;***
>
> ***6.3.a.2. Holes shall be bored to the depth of the proposed soil absorption field from six (6) to eight (8) inches in diameter at the site where the installation of the soil-absorption field is to take place;***
>
> ***6.3.a.3. The bottom and sides of the hole shall be scratched with a sharp pointed instrument or wire brush to remove any smeared soil surfaces that interfere with the absorption of water into the soil;***
>
> ***6.3.a.4. The loose dirt shall be removed from the bottom of the test holes and two (2) inches of gravel shall be placed into the holes to prevent sealing;***
>
> ***6.3.a.5. A nail or a marked measuring device shall be placed in the wall of each hole exactly six (6) inches above the level of the gravel;***
>
> ***6.3.a.6. The test hole shall be completely filled with water to ground level and maintained to a depth of at least twelve (12) inches for a minimum period of four (4) hours before beginning the percolation rate measurement.***
>
> ***6.3.b. Percolation Rate Measurement. After completing the requirements in Paragraph 6.3.a.1. - 6.3.a.6., the water depth shall be adjusted in the holes to the six (6) inch level. Determine how many minutes it takes for all of the water to absorb into the soil. The resulting time in minutes, divided by six (6), shall be the rate of fall or absorption per inch.***
>
> ***6.3.b.1. The average rate of fall for all test holes shall be determined by adding the rate of fall for each test hole together and dividing by the number of test holes. This figure is the average rate of fall per inch. See Table 64-47-L at the end of this rule.***

> ***6.3.b.2. If desired, an applicant may use an alternate test, if approved by the local health department.***
>
> ***6.3.b.3. Observation Hole. A hole shall be excavated six (6) feet deep in the center of the proposed soil absorption system area to evaluate the soil depth to bedrock and the seasonal water table. If slopes at the proposed site exceed fifteen percent (15%), the excavated observation hole shall be placed at the location of the lowest proposed trench of the system. Additional observation holes may be required when there are extreme variations in soil or geology in the test area.***
>
> ***6.3.b.4. Six (6) feet deep slit trenches of a specified length may be required in limestone geology to determine depth to bedrock.***

Le « Title 64, Series 9, Sewer Systems, Sewage Treatment Systems and Sewage Tank Cleaners » est celui qui prévoit les modalités relatives à l'obligation de mise aux normes d'une installation.

> ***§64-9-5. Construction and Installation Requirements.***
>
> ***5.1. The construction and installation or modification of all sewer systems shall be in accordance with Sewage Treatment and Collection System Design Standards, 64 CSR 47, or otherwise approved plans and specifications for which a permit has been issued by the director. Design standards may be obtained from the division of health, its district offices or local health department offices: Provided, that the director shall issue a permit for the installation of a National Sanitation Foundation Class I home aeration unit to be installed on a single family dwelling unit when no other approved system can be installed.***

> ***§64-9-6. Inspections.***
>
> ***6.1. The director may make, as many inspections as are necessary during the construction, installation, modification, or operation of sewer systems to determine compliance with the applicable provisions of this rule.***
>
> ***6.2. The owner or occupant of a dwelling, establishment, or land where a sewer system is located shall provide the director access to all parts of the property for the purpose of making the inspection.***
>
> ***6.3. No sewer system shall be used or placed into operation until the system installation has been approved in writing by the director.***
>
> ***6.4. No part of any sewer system utilizing soil absorption disposal of effluent shall be covered until the system installation has been approved in writing by the director. Any part of the system that is covered prior to approval shall be uncovered upon oral or written order of the director.***

6.5. In addition to making inspections or causing inspections to be made of a sewer system, the director may collect or cause to be collected samples of sewage and effluent from the system, or conduct or cause to be conducted, such tests as are necessary and proper to insure that the system is in compliance with all applicable provisions of this rule.

6.6. If the director finds that the construction, installation, extension, alteration, or operation of a sewer system is not in compliance with the applicable requirements of this rule, the director may issue an order for the corrections to be made. The order shall be issued in writing to the owner of the sewer system and the order shall be effective immediately.

12.16 AUTRES :

Éléments du Q-2, r.22 qui sont couverts par le territoire visé

Définitions	X
Hiérarchie du choix d'un système	
Obligation de vidange des fosses septiques	X
Méthodes pour établir la perméabilité du sol	X
Plages de perméabilité	X
Référence aux normes BNQ/NSF	X
Normes de construction des fosses construites sur place	X
Préfiltre	
Norme spécifique au déboisement (élément épurateur classique)	
Conduite d'amenée, raccordements et ventilation	X
Champ d'application du Règlement/type d'eau	X
Prohibition de rejeter des eaux usées	X
Interdiction d'utiliser certains produits (désinfection de ces eaux usées)	X
Conditions d'émission des permis (plan, études, etc.)	X
Implication d'un professionnel compétent pour la conception (Ordre professionnels)	
Désaffectation des systèmes	
Gestion des boues et des autres résidus	X
Cheminement des eaux et des effluents	
Normes de localisation pour les systèmes étanches et les systèmes non étanches	X
Normes techniques à respecter (matériaux, dimensions, etc.)	X
Conditions d'implantation des systèmes (pente, perméabilité, épaisseur de sol naturel, etc.)	X
Obligation d'entretien et/ou de maintenir un contrat d'entretien des systèmes certifiés	X
Normes de rejet des systèmes	
Systèmes spécifiquement pour des résidences/bâtiments existants	X
Toilettes à compost	X
Cabinet/toilettes sèches	X
Solutions si ségrégation des eaux (toilettes vs eaux ménagères) (ex : vidange périodique)	X
Déclencheurs/droits acquis pour la mise aux normes de systèmes existants	X
Dispositions encadrant les rejets au fossé/cours d'eau	X
Déphosphatation	
Désinfection	
Méthodes de prélèvement et d'analyse des rejets des systèmes	X
Définit la responsabilité des municipalités pour l'application du Règlement	
Amendes/infractions	X
Dispositions applicables à des territoires particuliers (Basse-Côte-Nord Iles-de-la-Madeleine, etc.)	x

Éléments couverts par le territoire visé et qui ne sont pas traités dans le Q-2, r.22

- Encadrement des trappes à graisse
- Croisement des branchements d'alimentation en eau potable et eaux usées.
- Encadrement des stations de pompage
- Pas de maximum de recouvrement des fosses
- Systèmes avec distribution et alimentation sous pression

SOURCES Virginie occidentale :

1. *West Virginia Division of Health Legislative Rules, Title 64. Serie 9, Sewer Systems, Sewage Treatment Systems and Sewage Tank Cleaners*
2. *West Virginia Division of Health Legislative Rules, Title 64. Serie 47, Sewage Treatment and Collection Systems Design Standards*
3. *Site internet official du Public Health Sanitation Division, West Virginia On-Site Sewage program, https://www.wvdhhr.org/phs/sewage/index.asp*

13.0 WASHINGTON

13.1 ENCADREMENT :

Dans l'État de Washington c'est le département de la Santé « Washington State Department of Health » qui est responsable de l'administration en matière de traitement des eaux usées. Le règlement utilisé dans le domaine est adopté par l'État. De plus, le règlement fait référence à un guide technique de la « United States Environmental Protection Agency (EPA) ».

- On-site Sewage Systems Chapter 246-272A WAC, Washington State Department of Health, Juillet 2007, revisé en juin 2017, ci-après le règlement
- On-site Wastewater Treatment Systems Manual, United States Environmental Protection Agency EPA-625/R-00/008, Février 2002, ci-après le guide

Les départements locaux de la santé sont responsables de l'application du règlement.

> ***WAC 246-272A-0430 Enforcement.***
>
> ***(1) The department or the local health officer:***
>
> ***(a) Shall enforce the rules of chapter 246-272A WAC; or***
>
> ***(b) May refer cases within their jurisdiction to the local prosecutor's office or office of the attorney general, as appropriate.***

Le règlement s'applique pour des débits journaliers ne devant pas excéder 3500 gallons/jour, soit environ 13 248 L/jour.

Le règlement en lui-même n'offre que peu de détails de construction sur les méthodes de traitement conventionnelles. Toutefois, il réfère à un guide de conception de la EPA, « On-site Wastewater Treatment Systems Manual ».

Ce guide fédéral, sans force de loi, fait office de guide technique et de document de vulgarisation dans l'État de Washington. Il sert donc d'outil de référence pour les concepteurs sur la façon de configurer les éléments épurateurs dans la mesure où les règles spécifiques de l'état sont respectées en matière de conditions de sites.

13.2 TYPE D'EAU : Types d'eau visés par l'encadrement

Le règlement s'applique aux eaux de nature domestique. Il s'applique aussi à tout autre bâtiment rejetant ce type d'eau, sans autre particularité. Ceci-dit, le règlement prévoit des dispositions qui permettent de ramener des eaux à charges organiques plus élevées à l'intérieur des paramètres d'eaux usées domestiques. Enfin le cadre d'application du règlement prévoit spécifiquement que celui-ci exclut les eaux de procédés industriels.

> ***WAC 246-272A-0020 Applicability.***
>
> ***(1) The local health officer:***
>
> ***(a) Shall apply this chapter to OSS treating sewage and dispersing effluent from residential sources with design flows up to three thousand five hundred gallons per day;***
>
> ***(b) May apply this chapter to OSS for nonresidential sources of sewage if treatment, siting, design, installation, and operation and maintenance measures provide treatment and effluent dispersal equal to that required of residential sources.***
>
> ***(c) May not apply this chapter to industrial wastewater.***
>
> ***"Industrial wastewater" means the water or liquid carried waste from an industrial process. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feedlots, poultry houses, or dairies. The term includes contaminated storm water and leachate from solid waste facilities.***

Il est explicitement prohibé d'introduire dans une installation septique des eaux susceptibles d'en altérer le bon fonctionnement.

> ***WAC 246-272A-0270 Operation, monitoring, and maintenance - Owner responsibilities.***
>
> ***[…]***
>
> ***(2) Persons shall not:***
>
> ***(a) Use or introduce strong bases, acids or chlorinated organic solvents into an OSS for the purpose of system cleaning;***
>
> ***(b) Use a sewage system additive unless it is specifically approved by the department; or***

> ***(c) Use an OSS to dispose of waste components atypical of sewage from a residential source.***

Le règlement ne prévoit pas spécifiquement de mesures de ségrégation des eaux de différents types combinés lorsque celle-ci sont présentes. Il n'y a pas non plus de disposition particulière pour des équipements ou usages tel que : adoucisseurs d'eau, salon de coiffure, atelier de mécanique.

13.3 DENSITÉ MAXIMALE : Densité maximale des installations septiques

La densité d'occupation et l'impact cumulatif des rejets d'eau usée est indirectement prise en compte par l'établissement de mesure de lotissement incluses au règlement. L'utilisation de technologies de traitement plus performantes et compactes n'offre pas de mesures d'assouplissement en regard de ces règles de lotissement. Ces dispositions s'appliquent uniformément sur tout le territoire visé et ce indépendamment du système projeté. Elles incluent notamment la nécessité de procéder à une évaluation du site à l'étape du lotissement plutôt que simplement à l'étape de l'émission du permis de construction. De façon générale, le règlement fixe ainsi les normes minimales pour de nouveaux lotissements contrairement au Québec où cette étape est encadrée par les règlements de lotissement des municipalités locales. En faisant intervenir la démarche d'évaluation de site comme étape préalable au lotissement, celle-ci permet de moduler dans certaines situations les dimensions des lots en fonction des conditions de sol. Une faible perméabilité pourrait ainsi nécessiter une subdivision de lots de plus grandes dimensions. À l'inverse, une démonstration du faible risque d'apport de contaminants pourrait justifier des dimensions de lot adaptées à des situations plus favorables.

> ***WAC 246-272A-0320 Developments, subdivisions, and minimum land area requirements.***
>
> ***(1) A person proposing a subdivision where the use of OSS is planned shall obtain a recommendation for approval from the local health officer as required by RCW 58.17.150.***
>
> ***(2) The local health officer shall require the following prior to approving any development:***
>
> ***(a) Site evaluations as required under WAC 246-272A-0220, excluding subsections (3)(a)(i) and (4)(d);***
>
> ***(b) Where a subdivision with individual wells is proposed:***
>
> ***(i) Configuration of each lot to allow a one hundred-foot radius water supply protection zone to fit within the lot lines; or***
>
> ***(ii) Establishment of a one hundred-foot protection zone around each existing and proposed well site;***
>
> ***(c) Where preliminary approval of a subdivision is requested, provision of at least one soil log per proposed lot, unless the local health officer determines existing soils information allows fewer soil logs;***
>
> ***(d) Determination of the minimum lot size or minimum land area required for the development using Method I and/or Method II:***
>
> ***METHOD I. Table X, Single-Family Residence Minimum Lot Size or Minimum Land Area Required Per Unit Volume of Sewage, shows the minimum lot size required***

per single-family residence. For developments other than single-family residences, the minimum land areas shown are required for each unit volume of sewage. However, the local health officer may require larger lot sizes where the local health officer has identified nitrogen as a concern either through planning activities described in WAC 246-272A-0015 or another process.

TABLE X

Minimum Land Area Requirement Single-Family Residence or Unit Volume of Sewage

Type of Water Supply	Soil Type (defined by WAC 246-272A-0220)					
	1	2	3	4	5	6
Public	0.5 acre	12,500 sq. ft	15,000 sq. ft.	18,000 sq. ft.	20,000 sq. ft.	22,000 sq. ft.
	2.5 acre[1]					
Individual on each lot	1.0 acre	1 acre	1 acre	1 acre	2 acres	2 acres
	2.5 acres[1]					

[1] See WAC 246-272A-0234(6).

METHOD II. A minimum land area proposal using Method II is acceptable only when the applicant:

(i) Justifies the proposal through a written analysis of the:

(A)Soil type and depth;

(B)Area drainage, and/or lot drainage;

(C) Public health impact on ground and surface water quality;

(D)Setbacks from property lines, water supplies, etc.;

(E) Source of domestic water;

(F) Topography, geology, and ground cover;

(G)Climatic conditions;

(H)Availability of public sewers;

(I) Activity or land use, present, and anticipated;

(J) Growth patterns;

(K)Reserve areas for additional subsurface treatment and dispersal;

(L) Anticipated sewage volume;

(M) Compliance with current planning and zoning requirements;

(N)Types of proposed systems or designs, including the use of systems designed for removal of nitrogen;

(O)Existing encumbrances, such as those listed in WAC 246-272A-0200 (1)(c)(v) and 246-272A-0220 (2)(a)(vii); and

(P) Estimated nitrogen loading from OSS effluent to existing ground and surface water;

(Q)Any other information required by the local health officer.

(ii) Shows development with public water supplies having:

(A)At least twelve thousand five hundred square feet lot sizes per single-family residence;

(B)No more than 3.5 unit volumes of sewage per day per acre for developments other than single-family residences; and

(iii) Shows development with individual water supplies having at least one acre per unit volume of sewage; and

(iv) Shows land area under surface water is not included in the minimum land area calculation; and

(e) Regardless of which method is used for determining required minimum lot sizes or minimum land area, submittal to the health officer of information consisting of field data, plans, and reports supporting a conclusion the land area provided is sufficient to:

(i) Install conforming OSS;

(ii) Assure preservation of reserve areas for proposed and existing OSS;

(iii) Properly treat and dispose of the sewage; and

(iv) Minimize public health effects from the accumulation of contaminants in surface and ground water.

13.4 REJETS : Rejets en surface

Le règlement prévoit la possibilité d'utiliser un rejet de surface, seulement, pour corriger une installation existante défectueuse. Cette solution est donc essentiellement utilisée en derniers recours pour des résidences existantes.

> ***WAC 246-272A-0280 Repair of failures.***
>
> ***(1) When an OSS failure occurs, the OSS owner shall:***
>
> ***[…]***
>
> ***(c) Perform one of the following when requirements in (a) and (b) of this subsection are not feasible:***
>
> ***(i) Use a holding tank; or***
>
> ***(ii) Obtain a National Pollution Discharge Elimination System or state discharge permit from the Washington state department of ecology issued to a public entity or jointly to a public entity and the system owner only when the local health officer determines:***
>
> ***(A)An OSS is not feasible; and***
>
> ***(B) The only realistic method of final dispersal of treated effluent is discharge to the surface of the land or into surface water; or***
>
> ***(iii) Abandon the property.***

L'utilisation d'un rejet de surface est encadrée par l'émission d'un permis de rejet spécifique de l'état « National Pollution Discharge Elimination System (N.P.D.E.S.) ». La démarche administrative d'obtention du NPDES semble complexe et réservée à des cas d'exceptions. Il s'agit d'une procédure au cas par cas. L'état fixe lui-même les modalités d'évaluation, de contrôle, de suivi et d'échantillonnage selon la sensibilité du milieu récepteur.

À titre d'exemple, l'état garde un registre de ce type de permis émis, il fait mention de 43 permis NPDES émis depuis 25 ans. Au cours des trois dernières années, environ 3 permis du genre ont été émis par année. Toutefois, les permis émis sont pour des établissements industriels, des sites miniers, etc. Aucun permis n'a été émis pour le traitement des eaux usées d'une résidence isolée. Nous comprenons donc que cette solution, quoique possible au règlement, n'est pas utilisée pour des résidences isolées et que le règlement offre des solutions plus simples aux propriétaires privés.

13.5 CONTAMINANTS : Contaminants encadrés

De façon générale, le règlement prévoit un encadrement des paramètres de DBO5C, MES et huiles et graisses. Toutefois, le règlement prévoit que d'autres contaminants peuvent être pris en compte au cas par cas, selon une planification locale « local management plan ».

> ***WAC 246-272A-0230 Design requirements - General.***
>
> ***(e) The OSS is designed to address sewage quality as follows:***
>
> ***(i) For all systems, the designer shall consider:***
>
> ***(A) CBOD5, TSS, and O&G;***
>
> ***(B) Other parameters that can adversely affect treatment anywhere along the treatment sequence. Examples include pH, temperature and dissolved oxygen;***
>
> ***(C) The sensitivity of the site where the OSS will be installed. Examples include areas where fecal coliform constituents can result in public health concerns, such as shellfish growing areas, designated swimming areas, and other areas identified by the local management plan required in WAC 246-272A-0015.***
>
> ***(D) Nitrogen contributions. Where nitrogen has been identified as a contaminant of concern by the local management plan required in WAC 246-272A-0015, it shall be addressed through lot size and/or treatment.***

Le tableau 3, reproduit à la page suivante, donne plus de détails sur les normes de rejet. L'échantillonnage des eaux usées n'est pas une obligation. L'entretien des systèmes est laissé à la discrétion des programmes de surveillance des autorités locales.

> ***WAC 246-272A-0270 Operation, monitoring, and maintenance - Owner responsibilities.***
>
> ***(1) The OSS owner is responsible for operating, monitoring, and maintaining the OSS to minimize the risk of failure, and to accomplish this purpose, shall:***
>
> ***(a) Obtain approval from the local health officer before repairing, altering or expanding an OSS;***
>
> ***(b) Secure and renew contracts for periodic maintenance where required by the local health jurisdiction;***
>
> ***(c) Obtain and renew operation permits if required by the local health jurisdiction;***
> ***[…]***

TABLE III

Product Performance Requirements for Proprietary Treatment Products

<table>
<tr><th>Treatment Component / Sequence Category</th><th colspan="6">Product Performance Requirements</th></tr>
<tr><td rowspan="9">Category 1 Designed to treat sewage with strength typical of a residential source when septic tank effluent is anticipated to be equal to or less than treatment level E.</td><td colspan="6">Treatment System Performance Testing Levels</td></tr>
<tr><td>Level</td><td colspan="5">Parameters</td></tr>
<tr><td></td><td>CBOD$_5$ (mg/L)</td><td>TSS (mg/L)</td><td>O&G (mg/L)</td><td>FC (#/100 ml)</td><td>TN (mg/L)</td></tr>
<tr><td>A</td><td>10</td><td>10</td><td>----</td><td>200</td><td>----</td></tr>
<tr><td>B</td><td>15</td><td>15</td><td>----</td><td>1,000</td><td>----</td></tr>
<tr><td>C</td><td>25</td><td>30</td><td>----</td><td>50,000</td><td>----</td></tr>
<tr><td>D</td><td>25</td><td>30</td><td>----</td><td>----</td><td>----</td></tr>
<tr><td>E</td><td>125</td><td>80</td><td>20</td><td>----</td><td>----</td></tr>
<tr><td>N</td><td>----</td><td>----</td><td>----</td><td>----</td><td>20</td></tr>
<tr><td colspan="6">Values for Levels A - D are 30-day values (averages for CBOD$_5$, TSS, and geometric mean for FC.) All 30-day averages throughout the test period must meet these values in order to be registered at these levels.

Values for Levels E and N are derived from full test averages.</td></tr>
<tr><td>Category 2 Designed to treat high-strength sewage when septic tank effluent is anticipated to be greater than treatment level E.

(Such as at restaurants, grocery stores, mini-marts, group homes, medical clinics, residences, etc.)</td><td colspan="6">All of the following requirements must be met:

(1) All full test averages must meet Level E; and
(2) Establish the treatment capacity of the product tested in pounds per day for CBOD$_5$</td></tr>
<tr><td>Category 3 Black water component of residential sewage (such as composting and incinerating toilets).</td><td colspan="6">Test results must meet the performance requirements established in the NSF test protocol</td></tr>
<tr><td>Total Nitrogen Reduction in Categories 1 & 2 (Above)</td><td colspan="6">Test results must establish product performance effluent quality meeting Level N, when presented as the full test average.</td></tr>
</table>

13.6 CERTIFICATION : Entité responsable d'effectuer la certification des différents intervenants et des technologies

La certification des technologies se fait par l'enregistrement de celles-ci auprès du département de la Santé suite à un protocole de test réussi auprès d'un des organismes accrédités par l'ANSI. Les systèmes doivent avoir démontré leur performance en fonction de différents protocoles internationaux reconnus.

> ***WAC 246-272A-0110 Proprietary treatment products - Certification and registration.***
>
> ***(1) Manufacturers shall register their proprietary treatment products with the department before the local health officer may permit their use.***
>
> ***(2) To qualify for product registration, manufacturers desiring to sell or distribute proprietary treatment products in Washington state shall:***
>
> ***(a) Verify product performance through testing using the testing protocol established in Table I and register their product with the department using the process described in WAC 246-272-0120;***
>
> ***(b) Report test results of influent and effluent sampling obtained throughout the testing period (including normal and stress loading phases) for evaluation of constituent reduction according to Table II;***
>
> ***(c) Demonstrate product performance according to Table III. All thirty-day averages and geometric means obtained throughout the test period must meet the identified threshold values to qualify for registration at that threshold level; and***
>
> ***(d) For registration at levels A, B, and C verify bacteriological reduction according to WAC 246-272A-0130.***
>
> ***(3) Manufacturers verifying product performance through testing according to the following standards or protocols shall have product testing conducted by a testing facility accredited by ANSI:***
>
> ***(a) ANSI/NSF Standard 40 - Residential Wastewater Treatment Systems;***
>
> ***(b) NSF Standard 41: Non-Liquid Saturated Treatment Systems;***
>
> ***(c) NSF Protocol P157 Electrical Incinerating Toilets - Health and Sanitation; or***
>
> ***(d) Protocol for bacteriological reduction described in WAC 246-272A-0130.***

Les concepteurs d'installations septiques doivent être des professionnels licenciés selon les modalités de l'article ci-dessous. Une exemption vise toutefois les situations ou un propriétaire peut concevoir lui-même son installation si sa résidence se situe dans une zone exemptée. Un

« local health officer » peut également concevoir une installation dont il a lui-même réalisé la caractérisation du site.

> ***WAC 246-272A-0230 Design requirements - General.***
>
> ***(1) On-site sewage systems may only be designed by professional engineers, licensed under chapter 18.43 RCW or on-site sewage treatment system designers, licensed under chapter 18.210 RCW, except:***
>
> ***(a) If at the discretion of the local health officer, a resident owner of a single-family residence not adjacent to a marine shoreline is allowed to design a system for that residence; or***
>
> ***(b) If the local health officer performs the soil and site evaluation, the health officer is allowed to design a system.***

Les installateurs et les compagnies de vidange de fosses doivent être approuvés par les autorités locales. La procédure d'approbation n'est pas documentée et elle semble laissée à leur discrétion.

> ***WAC 246-272A-0340 Certification of installers, pumpers, and maintenance service providers.***
>
> ***(1) OSS installers and pumpers must obtain approval from the local health officer prior to providing services within a local health jurisdiction.***
>
> ***(2) Local health officer may establish programs and requirements for approving maintenance service providers.***

13.7 CAPACITÉ : Capacité des fosses septiques

Le règlement encadre la capacité effective « Minimum Liquid Volumes » des fosses septiques de la façon suivante.

> ***(a) For a single family residence use Table VII, Required Minimum Liquid Volumes of Septic Tanks:***
>
> **TABLE VII**
>
> **Required Minimum Liquid Volumes of Septic Tanks**
>
> | Number of Bedrooms | Required Minimum Liquid Tank Volume in Gallons |
> |---|---|
> | ≤ 3 | 900 |
> | 4 | 1000 |
> | Each additional bedroom | 250 |
>
> ***(b) For OSS treating sewage from a residential source, other than one single-family residence, two hundred fifty gallons per bedroom with a minimum of one thousand gallons;***
>
> ***(c) For OSS treating sewage from a nonresidential source, three times the design flow.***

13.8 VIDANGE : Encadrement de la vidange des fosses septiques

Le règlement n'impose pas de fréquence obligatoire pour la vidange des fosses septiques, peu importe leur utilisation annuelle ou saisonnière. D'autre part, le règlement responsabilise le propriétaire en prévoyant indirectement que la vidange des fosses doit être faite, au besoin, selon une mesure de l'écume et des boues.

> ***WAC 246-272A-0270 Operation, monitoring, and maintenance - Owner responsibilities.***
>
> ***(1) The OSS owner is responsible for operating, monitoring, and maintaining the OSS to minimize the risk of failure, and to accomplish this purpose, shall:***
>
> ***[…]***
>
> ***(e) Employ an approved pumper to remove the septage from the tank when the level of solids and scum indicates that removal is necessary;***

La vidange lorsqu'effectuée doit malgré tout être rapportée aux autorités locales par le fournisseur de service. Elle doit notamment être réalisée par une personne autorisée par le « local health officer ».

> ***WAC 246-272A-0310 Septage management.***
>
> ***(1) The local health officer shall approve an individual before they may remove septage from an OSS.***
>
> ***(2) Persons removing septage from an OSS shall:***
>
> ***(a) Transport septage or sewage only in vehicles clearly identified with the name of the business and approved by the local health officer;***
>
> ***(b) Record and report septage removal as required by the local health officer; and***
>
> ***(c) Dispose of septage, or apply septage biosolids to land only in a manner consistent with applicable laws.***

13.9 SUIVI : Nécessité de faire le suivi des installations septiques

Les autorités locales de la santé ont la responsabilité, depuis 2007, d'adopter un plan d'intervention en matière de contrôle des installations septiques. À cet effet, le règlement stipule :

> ***WAC 246-272A-0015 Local management and regulation.***
>
> ***(1) By July 1, 2007, the local health officers of health jurisdictions in the twelve counties bordering Puget Sound shall develop a written plan that will provide guidance to the local health jurisdiction regarding development and management activities for all OSS within the jurisdiction. The plan must specify how the local health jurisdiction will:***
>
> ***(a) Progressively develop and maintain an inventory of all known OSS in operation within the jurisdiction;***
>
> ***(b) Identify any areas where OSS could pose an increased public health risk. The following areas shall be given priority in this activity: […]***
>
> ***(c) Identify operation, maintenance and monitoring requirements commensurate with risks posed by OSS within the geographic areas identified in (b) of this subsection;***
>
> ***(d) Facilitate education of homeowners regarding their responsibilities under this chapter and provide operation and maintenance information for all types of systems in use within the jurisdiction;***
>
> ***(e) Remind and encourage homeowners to complete the operation and maintenance inspections required by WAC 246-272A-0270;***
>
> ***(f) Maintain records required under this chapter, including of all operation and maintenance activities as identified; and***
>
> ***(g) Enforce OSS owner permit application, operation, monitoring and maintenance and failure repair requirements defined in WAC 246-272A-0200(1), 246-272A-0270, 246-272A-0275, and 246-272A-0280 (1) and (2);***
>
> ***(h) Describe the capacity of the local health jurisdiction to adequately fund the local OSS plan, including the ability to find failing and unknown systems; and***
>
> ***(i) Assure that it was developed to coordinate with the comprehensive land use plan of the entities governing development in the health officer's jurisdiction.***

De plus, le règlement, prévoit aussi qu'une inspection doit être effectuée aux 1 à 3 ans selon le type d'installation. Cette responsabilité incombe au propriétaire.

> ***WAC 246-272A-0270 Operation, monitoring, and maintenance - Owner responsibilities.***
>
> ***(1) The OSS owner is responsible for operating, monitoring, and maintaining the OSS to minimize the risk of failure, and to accomplish this purpose, shall:***
>
> ***[…]***
>
> ***(d) Assure a complete evaluation of the system components and/or property to determine functionality, maintenance needs and compliance with regulations and any permits:***
>
> ***(i) At least once every three years for all systems consisting solely of a septic tank and gravity SSAS;***
>
> ***(ii) Annually for all other systems unless more frequent inspections are specified by the local health officer;***

Par contre, pour un établissement de restauration, le règlement prévoit une obligation d'inspection annuelle.

> ***WAC 246-272A-0275 Operation, monitoring and maintenance - Food service establishments.***
>
> ***The local health officer shall require annual inspections of OSS serving food service establishments and may require pumping as needed.***

Enfin, tel que mentionné précédemment, il n'y a pas d'obligation relative à l'échantillonnage des systèmes (DBO5, MES, etc.).

13.10 RESTRICTIONS : Restrictions quant à la localisation des installations septiques

Le règlement encadre la localisation des composantes d'une installation septique en fonction étanchéité ou non. Le tableau 4, reproduit à la page suivante, dresse la liste des distances de localisation à respecter. L'article laisse toutefois place au jugement du fonctionnaire désigné d'augmenter ces distances si le risque de contamination est important, ou de les réduire si la situation le justifie.

> ***WAC 246-272A-0210 Location.***
>
> ***(1) Persons shall design and install OSS to meet the minimum horizontal separations shown in Table IV, Minimum Horizontal Separations:***
>
> ***(2) If any condition indicates a greater potential for contamination or pollution, the local health officer may increase the minimum horizontal separations. Examples of such conditions include excessively permeable soils, unconfined aquifers, shallow or saturated soils, dug wells, and improperly abandoned wells.***
>
> ***(3) The local health officer may allow a reduced horizontal separation to not less than two feet where the property line, easement line, in-ground swimming pool, or building foundation is up-gradient.***
>
> ***(4) The horizontal separation between an OSS dispersal component and an individual water well, individual spring, or surface water that is not a public water source can be reduced to a minimum of seventy-five feet, by the local health officer, and be described as a conforming system upon signed approval by the health officer if the applicant demonstrates:***
>
> ***(a) Adequate protective site-specific conditions, such as physical settings with low hydro-geologic susceptibility from contaminant infiltration. Examples of such conditions include evidence of confining layers and/or aquatards separating potable water from the OSS treatment zone, excessive depth to ground water, down-gradient contaminant source, or outside the zone of influence; or***
>
> ***(b) Design and proper operation of an OSS system assuring enhanced treatment performance beyond that accomplished by meeting the vertical separation and effluent distribution requirements described in WAC 246-272A-0230 Table VI; or***
>
> ***(c) Evidence of protective conditions involving both (a) and (b) of this subsection.***

Outre le tableau 4, il n'y a pas d'autre norme de localisation.

Table IV

Minimum Horizontal Separations

Items Requiring Setback	From edge of soil dispersal component and reserve area	From sewage tank and distribution box	From building sewer and nonperforated distribution pipe
Well or suction line	100 ft.	50 ft.	50 ft.
Public drinking water well	100 ft.	100 ft.	100 ft.
Public drinking water spring measured from the ordinary high-water mark	200 ft.	200 ft.	100 ft.
Spring or surface water used as drinking water source measured from the ordinary high-water mark[1]	100 ft.	50 ft.	50 ft.
Pressurized water supply line	10 ft.	10 ft.	10 ft.
Decommissioned well (decommissioned in accordance with chapter 173-160 WAC)	10 ft.	N/A	N/A
Surface water measured from the ordinary high-water mark	100 ft.	50 ft.	10 ft.
Building foundation/in-ground swimming pool	10 ft.	5 ft.	2 ft.
Property or easement line	5 ft.	5 ft.	N/A
Interceptor/curtain drains/foundation drains/drainage ditches			
Down-gradient[2]:	30 ft.	5 ft.	N/A
Up-gradient[2]:	10 ft.	N/A	N/A
Other site features that may allow effluent to surface			
Down-gradient[2]:	30 ft.	5 ft.	N/A
Up-gradient[2]:	10 ft.	N/A	N/A
Down-gradient cuts or banks with at least 5 ft. of original undisturbed soil above a restrictive layer due to a structural or textural change	25 ft.	N/A	N/A
Down-gradient cuts or banks with less than 5 ft. of original undisturbed soil above a restrictive layer due to a structural or textural change	50 ft.	N/A	N/A
Other adjacent soil dispersal components/subsurface storm water infiltration systems	10 ft.	N/A	N/A

[1]If surface water is used as a public drinking water supply, the designer shall locate the OSS outside of the required source water protection area.

[2]The item is down-gradient when liquid will flow toward it upon encountering a water table or a restrictive layer. The item is up-gradient when liquid will flow away from it upon encountering a water table or restrictive layer.

13.11 MILIEUX SENSIBLES :

Le règlement interdit les travaux de construction d'une installation septique sur les terrains dont la pente excède 45% ainsi que dans certaines conditions particulières.

> ***WAC 246-272A-0210 Location.***
>
> ***[…]***
>
> ***(5) Persons shall design and/or install a soil dispersal component only if:***
>
> ***(a) The slope is less than forty-five percent (twenty-four degrees);***
>
> ***(b) The area is not subject to:***
>
> ***(i) Encroachment by buildings or construction such as placement of power poles and underground utilities;***
>
> ***(ii) Cover by impervious material;***
>
> ***(iii) Vehicular traffic; or***
>
> ***(iv) Other activities adversely affecting the soil or the performance of the OSS.***
>
> ***(c) Sufficient reserve area for replacement exists to treat and dispose one hundred percent of the design flow;***
>
> ***(d) The land is stable; and***
>
> ***(e) Surface drainage is directed away from the site.***

Tel que vu à la section précédente, la marge de recul par rapport aux plans d'eau est modulée selon leur utilisation à titre de prise d'eau de consommation ou non. Les milieux boisés ne sont pas encadrés de façon particulière. Enfin, le règlement prévoit que les autorités locales peuvent identifier des milieux sensibles et ainsi inclure des mesures de protection supplémentaires dans ces territoires au besoin (aquaculture de mollusques, aquifères particuliers, plans d'eau récréatifs, milieux humides cultivés, zones inondables, secteurs sensibles à la contamination par l'azote, etc.)

> ***WAC 246-272A-0015 Local management and regulation.***
>
> ***By July 1, 2007, the local health officers of health jurisdictions in the twelve counties bordering Puget Sound shall develop a written plan that will provide guidance to the local health jurisdiction regarding development and management activities for all OSS within the jurisdiction. The plan must specify how the local health jurisdiction will:***
>
> ***[…]***
>
> ***(b) Identify any areas where OSS could pose an increased public health risk. The following areas shall be given priority in this activity:***

(i) Shellfish protection districts or shellfish growing areas;

(ii) Sole source aquifers designated by the USEPA;

(iii) Areas in which aquifers used for potable water as designated under the Washington State Growth Management Act, chapter 36.70A RCW are critically impacted by recharge;

(iv) Designated wellhead protection areas for Group A public water systems;

(v) Up-gradient areas directly influencing water recreation facilities designated for swimming in natural waters with artificial boundaries within the waters as described by the Water Recreation Facilities Act, chapter 70.90 RCW;

(vi) Areas designated by the department of ecology as special protection areas under WAC 173-200-090, Water quality standards for ground waters of the state of Washington;

(vii) Wetland areas under production of crops for human consumption;

(viii)Frequently flooded areas including areas delineated by the Federal Emergency Management Agency and or as designated under the Washington State Growth Management Act, chapter 36.70A RCW;

(ix) Areas where nitrogen has been identified as a contaminant of concern; and

(x) Other areas designated by the local health officer.

(c) Identify operation, maintenance and monitoring requirements commensurate with risks posed by OSS within the geographic areas identified in (b) of this subsection;

13.12 TOILETTES : Toilettes à compost, toilettes chimiques et toilettes à incinération

Le règlement ne contient pas de disposition relative aux toilettes alternatives. La seule mention qui est faite est l'obligation de certification en référant aux standards internationaux (NSF/ANSI Standard 41: Non-Liquid Saturated Treatment Systems (September 1999) et NSF Protocol P157 Electrical Incinerating Toilets - Health and Sanitation (April 2000)). Nous comprenons que celles-ci sont autorisées. Les modalités de leur utilisation ne sont pas détaillées davantage.

13.13 PERMÉABILITÉ DU SOL :

Le règlement ne distingue pas de plage de perméabilité en fonction de la percolation du sol mais réfère plutôt à des catégories en fonction de la classe texturale (Tableau 5).

TABLE V

Soil Type Descriptions

Soil Type	Soil Textural Classifications
1	Gravelly and very gravelly coarse sands, all extremely gravelly soils excluding soil types 5 and 6, all soil types with greater than or equal to 90% rock fragments.
2	Coarse sands.
3	Medium sands, loamy coarse sands, loamy medium sands.
4	Fine sands, loamy fine sands, sandy loams, loams.
5	Very fine sands, loamy very fine sands; or silt loams, sandy clay loams, clay loams and silty clay loams with a moderate or strong structure (excluding platy structure).
6	Other silt loams, sandy clay loams, clay loams, silty clay loams.
7 Unsuitable for treatment or dispersal	Sandy clay, clay, silty clay, strongly cemented or firm soils soil with a moderate or strong platy structure any soil with a massive structure any soil with appreciable amounts of expanding clays.

Cette classe texturale est ensuite utilisée pour déterminer le niveau de traitement requis selon l'épaisseur de sol avant d'atteindre une couche limitative.

> ***"Vertical separation" means the depth of unsaturated, original, undisturbed soil of soil types 1-6 between the bottom infiltrative surface of a soil dispersal component and the highest seasonal water table, a restrictive layer, or soil type 7 as illustrated below by the profile drawing of subsurface soil absorption systems:***

TABLE VI

Treatment Component Performance Levels and Method of Distribution[1]

Vertical Separation in inches	Soil Type		
	1	2	3-6
12 < 18	**A** - pressure with timed dosing	**B** - pressure with timed dosing	**B** - pressure with timed dosing
≥ 18 < 24	**B** - pressure with timed dosing	**B** - pressure with timed dosing	**B** - pressure with timed dosing
≥ 24 < 36	**B** - pressure with timed dosing	**C** - pressure	**E** - pressure
≥ 36 < 60	**B** - pressure with timed dosing	**E** - pressure	**E** - gravity
≥ 60	**C** - pressure	**E** - gravity	**E** - gravity

[1]The treatment component performance levels correspond with those established for treatment components under the product testing requirements in WAC 246-272A-0110.

Le règlement ne prévoit pas de détails de construction (longueur, superficie, etc) pour les différents systèmes de traitement par infiltration. La configuration des systèmes est basé sur un taux de charge hydraulique par unité de superficie (ex : L/m²) à respecter en fonction de la classe texturale du sol.

D'autre part, les sols ayant une mauvaise perméabilité (type 7) sont considérés comme impropres à l'infiltration. Le règlement ne prévoit donc pas explicitement de solutions adaptées à ces situations et n'intègre pas de taux de charge hydraulique pour ces sols. Le tableau 8, reproduit à la page suivante, illustre les différents taux de charge hydraulique.

Les clauses de dérogation au règlement sont toutefois non spécifiques et au sens très large.

> ***WAC 246-272A-0420 Waiver of state regulations.***
>
> ***(1) The local health officer may grant a waiver from specific requirements of this chapter if: (a) The waiver request is evaluated by the local health officer on an individual, site-by-site basis;***
>
> ***(b) The local health officer determines that the waiver is consistent with the standards in, and the intent of, these rules;***
>
> ***(c) The local health officer submits quarterly reports to the department regarding any waivers approved or denied; and***
>
> ***(d) Based on review of the quarterly reports, if the department finds that the waivers previously granted have not been consistent with the standards in, and the intent of these rules, the department shall provide technical assistance to the local health officer to correct the inconsistency, and may notify the local and state***

> ***boards of health of the department's concerns. If upon further review of the quarterly reports, the department finds that the inconsistency between the waivers granted and the state board of health standards has not been corrected, the department may suspend the authority of the local health officer to grant waivers under this section until such inconsistencies have been corrected.***
>
> ***(2) The department shall develop guidance to assist local health officers in the application of waivers.***

On en comprend donc que toutes les dispositions sont admissibles dans la mesure où il y'a démonstration que l'objectif du règlement est atteint au final. On peut penser par exemple qu'une demande d'augmentation du niveau de traitement en amont du système d'infiltration et l'utilisation de sable filtrant prévue pour aménager un terrain récepteur propice à l'évacuation devrait être évaluée au mérite par le fonctionnaire désigné dans un processus de demande de dérogation.

TABLE VIII

Maximum Hydraulic Loading Rate

Soil Type	Soil Textural Classification Description	Loading Rate for Residential Effluent Using Gravity or Pressure Distribution (gal./sq. ft./day)
1	Gravelly and very gravelly coarse sands, all extremely gravelly soils excluding Soil types 5 & 6, all soil types with greater than or equal to 90% rock fragments.	1.0
2	Coarse sands.	1.0
3	Medium sands, loamy coarse sands, loamy medium sands.	0.8
4	Fine sands, loamy fine sands, sandy loams, loams.	0.6
5	Very fine sands, loamy very fine sands; or silt loams, sandy clay loams, clay loams and silty clay loams with a moderate structure or strong structure (excluding a platy structure.	0.4
6	Other silt loams, sandy clay loams, clay loams, silty clay loams.	0.2
7	Sandy clay, clay, silty clay and strongly cemented firm soils soil with a moderate or strong platy structure any soil with a massive structure any soil with appreciable amounts of expanding clays.	Not suitable

L'utilisation de fosses de rétention est limitée par des critères précis et n'est pas une solution favorisée d'emblée.

> ***WAC 246-272A-0240 Holding tank sewage systems.***
>
> ***(1) A person may not install or use holding tank sewage systems for residential development or expansion of residences, whether seasonal or year-round, except as set forth under subsection (2) of this section.***
>
> ***(2) The local health officer may approve installation of holding tank sewage systems only:***
>
> ***(a) For permanent uses limited to controlled, part-time, commercial usage situations, such as recreational vehicle parks and trailer dump stations;***
>
> ***(b) For interim uses limited to handling of emergency situations; or***
>
> ***(c) For repairs as permitted under WAC 246-272A-0280 (1)(c)(i).***
>
> ***(3) A person proposing to use a holding tank sewage system shall:***
>
> ***(a) Follow design criteria established by the department;***

(b) Submit a management program to the local health officer assuring ongoing operation, monitoring and maintenance before the local health officer issues the installation permit; and

(c) Use a holding tank reviewed and approved by the department.

13.14 FORTES CONTRAINTES : Solutions pour les sites à fortes contraintes

Le règlement de l'état de Washington est l'un des plus explicites rencontrés sur la hiérarchie décisionnelle à adopter pour la mise aux normes d'une installation existante dans des conditions de sites problématiques (zone inondable, rive et littoral, faible épaisseur de sol).

> ***WAC 246-272A-0280 Repair of failures.***
>
> ***(1) When an OSS failure occurs, the OSS owner shall:***
>
> ***(a) Repair or replace the OSS with a conforming system or component, or a system meeting the requirements of Table IX either on the:***
>
> ***(i) Property served; or***
>
> ***(ii) Nearby or adjacent property if easements are obtained; or***
>
> ***(b) Connect the residence or facility to a: (i) Publicly owned LOSS;***
>
> ***(ii) Privately owned LOSS where it is deemed economically feasible; or***
>
> ***(iii) Public sewer; or***
>
> ***(c) Perform one of the following when requirements in (a) and (b) of this subsection are not feasible: (i) Use a holding tank; or***
>
> ***(ii) Obtain a National Pollution Discharge Elimination System or state discharge permit from the Washington state department of ecology issued to a public entity or jointly to a public entity and the system owner only when the local health officer determines:***
>
> ***(A)An OSS is not feasible; and***
>
> ***(B) The only realistic method of final dispersal of treated effluent is discharge to the surface of the land or into surface water; or***
>
> ***(iii) Abandon the property.***

Le règlement prévoit également les mesures de correction spécifiques aux situations de fortes contraintes en établissant des paramètres de conception d'exception dont des clauses dérogatoires. Notamment une augmentation du niveau de traitement en amont du système d'infiltration permet des assouplissements. En général le niveau de traitement exigé correspond à un traitement tertiaire avec désinfection au Québec. Compte tenu de l'importance de cette thématique, le contenu est reproduit dans son entier dans les pages suivantes.

Au tableau 9, il est question d'allègements pour les sols n'ayant pas l'épaisseur réglementaire ou les systèmes ne respectant pas les normes de localisation.

WAC 246-272A-0280 Repair of failures.

[…]

(3) The local health officer shall permit a system that meets the requirements of Table IX only if the following are not feasible:

(a) Installation of a conforming system or component; and

(b) Connection to either an approved LOSS or a public sewer.

(4) The person responsible for the design shall locate and design repairs to:

(a) Meet the requirements of Table IX if the effluent treatment and soil dispersal component to be repaired or replaced is closer to any surface water, well, or spring than prescribed by the minimum separation required in Table IV of WAC 246-272A-0210(1). Pressure distribution with timed dosing in the soil dispersal component is required in all cases where a conforming system is not feasible.

(b) Protect drinking water sources and shellfish harvesting areas;

(c) Minimize nitrogen discharge in areas where nitrogen has been identified as a contaminant of concern in the local plan under WAC 246-272A-0015;

(d) Prevent the direct discharge of sewage to ground water, surface water, or upon the surface of the ground;

(e) Meet the horizontal separations under WAC 246-272A-0210(1) to public drinking water sources;

(f) Meet other requirements of this chapter to the maximum extent permitted by the site; and

TABLE IX

Treatment Component Performance Levels for Repair of OSS Not Meeting Vertical and Horizontal Separations[1]

Vertical Separation (in inches)	Horizontal Separation[2]											
	< 25 feet			25 < 50 feet			50 < 100 feet[3]			≥ 100 feet		
	Soil Type			Soil Type			Soil Type			Soil Type		
	1	2	3-6	1	2	3-6	1	2	3-6	1	2	3-6
< 12	A	A	A	A	A	A	A	A	B	B	B	B
≥ 12 < 18	A	A	A	A	B	B	A	B	B	Conforming Systems		
≥ 18 < 24	A	A	A	A	B	B	A	B	C			
≥ 24 < 36	A	B	B	B	C	C	B	C	C			
≥ 36	A	B	B	B	C	C	B	C	E			

[1] The treatment component performance levels correspond with those established for treatment components under the product performance testing requirements in Table III of WAC 246-272A-0110.
[2] The horizontal separation indicated in Table IX is the distance between the soil dispersal component and the surface water, well, or spring. If the soil dispersal component is up-gradient of a surface water, well, or spring to be used as a potable water source, or beach where shellfish are harvested, the next higher treatment level shall apply unless treatment level A is already required.
[3] On a site where there is a horizontal setback of 75 - 100 feet between an OSS dispersal component and an individual water well, individual spring, nonmarine surface water or surface water that is not a public water source and a vertical separation of greater than twelve inches, a conforming system that complies with WAC 246-272A-0210(4) shall be installed if feasible.

(g) Maximize the:

(i) Vertical separation;

(ii) Distance from a well, spring, or suction line; and

(iii) Distance to surface water.

(5) Prior to designing the repair system, the designer shall consider the contributing factors of the failure to enable the repair to address identified causes.

(6) If the vertical separation is less than twelve inches, the local health officer may permit ASTM C-33 sand or coarser to be used as fill to prevent direct discharge of treated effluent to ground water, surface water, or upon the surface of the ground.

(7) For a repair using the requirements of Table IX, disinfection may not be used to achieve the fecal coliform requirements to meet:

(a) Treatment levels A or B where there is less than eighteen inches of vertical separation;

(b) Treatment levels A or B in type 1 soils; or

(c) Treatment level C.

(8) The local health officer shall identify repair permits meeting the requirements of Table IX for the purpose of tracking future performance.

(9) An OSS owner receiving a repair permit for a system meeting the requirements of Table IX from the local health officer shall: (a) Immediately report any failure to the local health officer;

(b) Comply with all local and state requirements stipulated on the permit.

13.15 ÉTUDES : Études préalables et mise aux normes

Le règlement prévoit qu'un permis est requis préalablement à la construction, réparation, modification, agrandissement d'une installation septique. Le contenu de la demande de permis est énuméré dans le règlement.

> ***WAC 246-272A-0200 Permit requirements.***
>
> ***(1) Prior to beginning the construction process, a person proposing the installation, repair, modification, connection to, or expansion of an OSS, shall report the following and obtain a permit from the local health officer:***
>
> ***(a) General information including:***
>
> ***(i) Name and address of the property owner and the applicant at the head of each page of submission;***
>
> ***(ii) Parcel number and if available, the address of the site;***
>
> ***(iii) Source of drinking water supply;***
>
> ***(iv) Identification if the property is within the boundaries of a recognized sewer utility;***
>
> ***(v) Size of the parcel;***
>
> ***(vi) Type of permit for which application is being made, for example, new installation, repair, expansion, modification, or operational;***
>
> ***(vii) Source of sewage, for example, residence, restaurant, or other type of business;***
>
> ***(viii)Location of utilities;***
>
> ***(ix) Name of the site evaluator;***
>
> ***(x) Name, signature and stamp of the designer;***
>
> ***(xi) Date of application; and***
>
> ***(xii) Name and signature of the fee simple owner, the contract purchaser of the property or the owner's authorized agent.***
>
> ***(b) The soil and site evaluation as specified under WAC 246-272A-0220.***
>
> ***(c) A dimensioned site plan of the proposed initial system, the reserve area and those areas immediately adjacent that contain characteristics impacting design including:***
>
> ***(i) Designated areas for the proposed initial system and the reserve area;***
>
> ***(ii) The location of all soil logs and other soil tests for the OSS;***
>
> ***(iii) General topography and/or slope;***

(iv) Drainage characteristics;

(v) The location of existing and proposed encumbrances affecting system placement, including legal access documents if any component of the OSS is not on the lot where the sewage is generated; and

(vi) An arrow indicating north.

(d) A detailed system design meeting the requirements under WAC 246-272A-0230, 246-272A-0232, 246-272A-0234, and 246-272A-0238 including:

(i) A drawing showing the dimensioned location of components of the proposed OSS, and the system designed for the reserve area if reserve site characteristics differ significantly from the initial area;

(ii) Vertical cross-section drawings showing:

(A) The depth of the soil dispersal component, the vertical separation, and depth of cover material; and

(B) Other new OSS components constructed at the site.

(iii) Calculations and assumptions supporting the proposed design, including:

(A) System operating capacity and design flow;

(B) Soil type; and

(C) Hydraulic loading rate in the soil dispersal component; and

(e) Any additional information as deemed necessary by the local health officer.

(2) A permit is not required for replacement, addition, or modification of broken or malfunctioning building sewers, risers and lids, sewage tank lids, sewage tank baffles, sewage tank pumps, pump control floats, pipes connecting multiple sewage tanks, and OSS inspection boxes and ports where a sewage tank, treatment component, or soil dispersal component does not need to be replaced. The local health officer may require the owner to submit information regarding these activities for recordkeeping purposes.

(3) The local health officer may develop the information required in subsection (1) of this section if authorized by local regulations.

[…]

(6) Before the local health officer issues a permit for the installation of an OSS to serve more than one development, the applicant shall show:

(a) An approved public entity owning or managing the OSS in perpetuity; or

(b) A management arrangement acceptable to the local health officer, recorded in covenant, lasting until the on-site system is no longer needed, and containing, but not limited to:

> ***(i) A recorded easement allowing access for construction, operation, monitoring maintenance, and repair of the OSS; and***
>
> ***(ii) Identification of an adequate financing mechanism to assure the funding of operation, maintenance, and repair of the OSS.***
>
> ***[…]***
>
> ***(8) The local health officer may stipulate additional requirements for a particular permit if necessary for public health protection.***

Le contenu de l'évaluation de site est tel que décrit à l'article suivant.

> ***WAC 246-272A-0220 Soil and site evaluation.***
>
> ***(1) Only professional engineers, designers, or local health officers may perform soil and site evaluations. Soil scientists may only perform soil evaluations.***
>
> ***(2) The person evaluating the soil and site shall:***
>
> ***(a) Report:***
>
> ***(i) A sufficient number of soil logs to evaluate conditions within:***
>
> ***(A) The initial soil dispersal component; and***
>
> ***(B) The reserve area.***
>
> ***(ii) The ground water conditions, the date of the observation, and the probable maximum height;***
>
> ***(iii) The topography of the proposed initial system, the reserve area, and those areas immediately adjacent that contain characteristics impacting the design;***
>
> ***(iv) The drainage characteristics of the proposed initial system, the reserve area and those areas immediately adjacent that contain characteristics impacting the design;***
>
> ***(v) The existence of structurally deficient soils subject to major wind or water erosion events such as slide zones and dunes;***
>
> ***(vi) The existence of designated flood plains and other areas identified in the local management plan required in WAC 246-272A-0015; and***
>
> ***(vii) The location of existing features affecting system placement, such as, but not limited to:***
>
> ***(A)Wells and suction lines;***
>
> ***(B)Water sources and supply lines;***
>
> ***(C) Surface water and stormwater infiltration areas;***

> ***(D)Abandoned wells;***
>
> ***(E) Outcrops of bedrock and restrictive layers;***
>
> ***(F) Buildings;***
>
> ***(G)Property lines and lines of easement;***
>
> ***(H) Interceptors such as footing drains, curtain drains, and drainage ditches;***
>
> ***(I) Cuts, banks, and fills;***
>
> ***(J) Driveways and parking areas;***
>
> ***(K)Existing OSS; and***
>
> ***(L) Underground utilities;***
>
> ***(b) Use the soil and site evaluation procedures and terminology in accordance with Chapter 5 of the On-site Wastewater Treatment Systems Manual, EPA 625/R-00/008, February 2002 except where modified by, or in conflict with, this chapter (available upon request to the department);***
>
> ***(c) Use the soil names and particle size limits of the United States Department of Agriculture Natural Resources Conservation Service classification system;***
>
> ***(d) Determine texture, structure, compaction and other soil characteristics that affect the treatment and water movement potential of the soil by using normal field and/or laboratory procedures such as particle size analysis; and***
>
> ***(e) Classify the soil as in Table V, Soil Type Descriptions: […]***

Le règlement ne traite pas spécifiquement de la notion de changement de vocation, modification partielle ou augmentation de débit d'exploitation. Toutefois, le propriétaire doit respecter le débit de conception d'origine d'un ouvrage. Il semble évident que lors d'une augmentation de débit, le système doit être adapté ou remplacé.

> ***WAC 246-272A-0270 Operation, monitoring, and maintenance - Owner responsibilities.***
>
> ***(1) The OSS owner is responsible for operating, monitoring, and maintaining the OSS to minimize the risk of failure, and to accomplish this purpose, shall:***
>
> ***[…]***
>
> ***(h) Keep the flow of sewage to the OSS at or below the approved operating capacity and sewage quality;***

13.16 AUTRES :

Éléments du Q-2, r.22 qui sont couverts par le territoire visé

Définitions	X
Hiérarchie du choix d'un système	
Obligation de vidange des fosses septiques	
Méthodes pour établir la perméabilité du sol	
Plages de perméabilité	X
Référence aux normes BNQ/NSF	X
Normes de construction des fosses construites sur place	
Préfiltre	X
Norme spécifique au déboisement (élément épurateur classique)	
Conduite d'amenée, raccordements et ventilation	
Champ d'application du Règlement/type d'eau	X
Prohibition de rejeter des eaux usées	X
Interdiction d'utiliser certains produits (désinfection de ces eaux usées)	X
Conditions d'émission des permis (plan, études, etc.)	X
Implication d'un professionnel compétent pour la conception (Ordre professionnels)	X
Désaffectation des systèmes	X
Gestion des boues et des autres résidus	X
Cheminement des eaux et des effluents	
Normes de localisation pour les systèmes étanches et les systèmes non étanches	X
Normes techniques à respecter (matériaux, dimensions, etc.)	X
Conditions d'implantation des systèmes (pente, perméabilité, épaisseur de sol naturel, etc.)	X
Obligation d'entretien et/ou de maintenir un contrat d'entretien des systèmes certifiés	X
Normes de rejet des systèmes	X
Systèmes spécifiquement pour des résidences/bâtiments existants	X
Toilettes à compost	X
Cabinet/toilettes sèches	
Solutions si ségrégation des eaux (toilettes vs eaux ménagères) (ex : vidange périodique)	
Déclencheurs/droits acquis pour la mise aux normes de systèmes existants	X
Dispositions encadrant les rejets au fossé/cours d'eau	X
Déphosphatation	
Désinfection	X
Méthodes de prélèvement et d'analyse des rejets des systèmes	
Définit la responsabilité des municipalités pour l'application du Règlement	X
Amendes/infractions	
Dispositions applicables à des territoires particuliers (Basse-Côte-Nord Iles-de-la-Madeleine, etc.)	x

Éléments couverts par le territoire visé et qui ne sont pas traités dans le Q-2, r.22

- Interdiction générale d'utilisation des puits absorbants
- Possibilité d'utiliser des fosses septiques en série
- Assouplissement sous conditions pour les lots de plus de 2.5 acres
- Protection nécessaire d'une surface de remplacement pour mise aux normes éventuelle
- Processus local de dérogation

SOURCES Washington:

1. *Washington State Department of Health, On-site Sewage Systems Chapter 246-272A WAC, Juillet 2007*
2. *United States Environmental Protection Agency, On-site Wastewater Treatment Systems Manual, EPA-625/R-00/008, Février 2002*
3. *USEPA, Washington NPDES Permits, https://www.epa.gov/npdes-permits/washington-npdes-permits, décembre 2019*

14.0 WISCONSIN

14.1 ENCADREMENT :

L'encadrement du traitement et de l'évacuation des eaux usées des résidences isolées au Wisconsin est sous la responsabilité du Département des ressources naturelles « Department of Natural Resources » (article 383.02). Toutefois, c'est le « Department of Safety and Professional Services » qui est responsable de l'application des normes pour les projets comportant un système de traitement par infiltration[18].

> ***SPS 383.02 Scope. (1) WASTEWATER GENERATION.***
>
> ***[…]***
>
> ***Note: The department of natural resources is responsible for establishing, administering and enforcing standards relative to domestic wastewater treatment systems which either disperse to the surface or to surface waters. The department of natural resources also establishes effluent limitations and monitoring requirements where the design daily influent wastewater flow to a POWTS exceeds 12,000 gallons per day for the purpose of fulfilling WPDES permit requirements under ch. 283, Stats.***
>
> ***Note: Pursuant to s. 281.17 (5), Stats., the department of natural resources may also restrict or specify the type of wastewater treatment necessary.***

> ***Subsurface disposal of domestic wastewater***
>
> ***Small wastewater systems for the underground disposal of domestic wastewater are regulated by the Department of Safety and Professional Services (DSPS), unless that wastewater is discharged in a way that may reach surface water, in which case the design will likely also require review and approval by the Department of Natural Resources (DNR).***

Le texte légal applicable est le Code administratif de l'État « Administrative Code, Department of Safety and Professional Services (SPS) » dont les chapitres 301 à 399 concernent la sécurité, le bâtiment et l'environnement. C'est principalement le chapitre 383 « Private onsite wastewater treatment systems » du « Wisconsin Administrative Code » qui encadre le traitement des eaux usées.

[18] https://dnr.wi.gov/topic/wastewater/nondomestic.html

Toutefois, le texte du règlement est très dilué. L'information essentielle se retrouve dans plusieurs chapitres du Code administratif. Les chapitres 381, 382, 383, 384, 385 et 391 ont principalement été utilisés pour nos travaux de recherche puisqu'ils sont plus spécifiques au traitement des eaux usées des résidences isolées. Les documents pertinents sont :

- Wisconsin Administrative Code, Chapter SPS 381, Definitions and standards, dernière mise à jour en date de juin 2018, ci-après le règlement 381
- Wisconsin Administrative Code, Chapter SPS 382, Design, construction, installation, supervision, maintenance and inspection of plumbing, dernière mise à jour en date de juin 2016, ci-après le règlement 382
- Wisconsin Administrative Code, Chapter SPS 383, Private onsite wastewater treatment systems, dernière mise à jour en date de juin 2018, ci-après le règlement
- Wisconsin Administrative Code, Chapter SPS 384: Plumbing products, dernière mise à jour en date de juin 2018, ci-après le règlement 384
- Wisconsin Administrative Code, Chapter SPS 385: Soil And Site Evaluations, dernière mise à jour en date de juin 2018, ci-après le règlement 385
- Wisconsin Administrative Code, Chapter SPS 391: Sanitation, dernière mise à jour en date de juin 2018, ci-après le règlement 391

La responsabilité d'application des normes est déterminée selon les dispositions de l'article 383.22 du règlement. La mise en application des règlements varie en fonction du type de projet. Les projets individuels sont administrés par les autorités locales lorsqu'ils regroupent deux résidences ou moins (tableau 383.22-3).

> ***SPS 383.22 Plan review and approval. (1) SUBMISSION OF PLANS. (a) Plans shall be submitted to the department, a designated agent, or the governmental unit in accordance with this section for all of the following types of installations or modifications:***
>
> ***1. The installation or construction of a POWTS.***
>
> ***2. The replacement or addition of a POWTS treatment component.***
>
> ***3. The replacement or addition of a POWTS holding component.***
>
> ***4. The replacement or addition of a POWTS dispersal component.***
>
> ***(b) Plans for the types of POWTS delineated in Table 383.22–1 shall be submitted to the department for review.***

> ***(c) Plans for the types of POWTS delineated in Table 383.22–2 shall be submitted for review to the department or a designated agent[19].***
>
> ***Note: See s. SPS 383.23 for more information relative to designated agents.***
>
> ***(d) Plans for the types of POWTS delineated in Table 383.22–3 shall be submitted for review to the appropriate governmental unit where the POWTS is located or will be located.***

Le « governmental unit » approprié constitue une entité gouvernementale locale qui aurait fait la demande au département pour se voir octroyé le pouvoir de traiter l'analyse des demandes.

> ***SPS 383.23 Review agent status.***
>
> ***(1) Upon request from a governmental unit, the department may delegate to the governmental unit the responsibility to review plans for one or more of the types of POWTS delineated in Table 383.22-2 which are to be or are located within the jurisdiction of that governmental unit […]***

[19] SPS 383.23 Review agent status. (3) The delegation of plan review by the department shall be contingent upon a governmental unit's request demonstrating sufficient capabilities to complete the reviews, including all of the following:

(a) The utilization of one or more individuals who are certified by the department as a POWTS inspector to perform the plan review.

(b) The utilization of one or more individuals, who are certified soil testers, to provide assistance in the plan review process.

Table 383.22–1
Plan Submissions to Department

	Type of Installation
1.	POWTS owned by the state.
2.	Facilities owned by the state and served by POWTS.
3.	POWTS that will not completely utilize treatment and dispersal technologies or methods either approved under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1).
4.	POWTS treating domestic wastewater combined with industrial wastes.[a]
5.	Experiments under s. SPS 383.27.

[a] See s. SPS 383.32 (3) (a).

Table 383.22–2
Plan Submissions to Department or Designated Agent

	Type of Installation
1.	POWTS that will completely utilize treatment and dispersal technologies or methods either approved under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1).
2.	POWTS that collect and hold all wastewater of the facilities served and utilize holding components designed based on ≥3,000 gpd estimated flow either recognized under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1).

Note: Pursuant to s. 145.19 (2), Stats., governmental units may require separate plan examination fees or include these fees in the cost of the sanitary permit.

Table 383.22–3
Plan Submissions to Governmental Unit

	Type of Installation
1.	POWTS that will serve not more than two one– or 2–family dwellings and their accessory buildings utilizing technologies or methods either recognized under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1), and using gravity distribution of the effluent to an in–ground distribution cell.
2.	POWTS that collect and hold all wastewater of the facilities served and utilize holding components designed based on <3,000 gpd estimated flow either recognized under s. SPS 384.10 (2) or (3) or recognized under s. SPS 383.60 (1).

Note: Pursuant to s. 145.19 (2), Stats., governmental units may require separate plan examination fees or include these fees in the cost of the sanitary permit.

Les dispositions précédentes démontrent que les règlements trouvent application pour tout type de débit ou tout type d'eaux, domestiques ou même combinées à des eaux industrielles.

Le « Wisconsin Department of Safety and Professional Services » publie quant à lui une série de guide de conception à jour en date de 2012. Cette série de guide énonce sommairement les modalités de conception des éléments épurateurs enfouis, en surface, hors-sol et les fosses de rétention.

14.2 TYPE D'EAU : Types d'eau visés par l'encadrement

Les eaux qui sont encadrées par le règlement sont les eaux domestiques. Toutefois, le règlement ne définit pas précisément la nature de celles-ci. Les articles ci-dessous contiennent quelques précisions.

> ***SPS 383.02 Scope. (1) WASTEWATER GENERATION.***
>
> ***Except as delineated in sub. (2), this chapter applies to all of the following:***
>
> ***(a) A situation where domestic wastewater is collected and conducted by means of plumbing drain systems and is not conveyed to a wastewater treatment facility regulated by the department of natural resources.***
>
> ***(b) A POWTS where domestic wastewater is treated and dispersed to the subsurface.***
>
> ***(c) A holding tank that is utilized as a POWTS or as part of a POWTS to collect and hold domestic wastewater for transport and treatment elsewhere.***

> ***SPS 383.32 Prohibitions and limitations.***
>
> ***(3) LIMITATIONS. (a) Industrial wastes and wastewater may not, unless approved by the department of natural resources, be introduced into a POWTS.***
>
> ***Note: The department of natural resources regulates the discharge of industrial wastes to land treatment systems under ch. NR 214. Section NR 214.02 reads in part:***
>
> ***"This chapter applies to those discharges of industrial wastes to land treatment systems not regulated under ch. NR 518. This includes but is not limited to liquid wastes, by–product solids and sludges generated by: fruit and vegetable processing, dairy products processing, meat, fish and poultry products processing, mink raising operations, aquaculture, commercial laundromat and motor vehicle cleaning operations and any other industrial, commercial or agricultural operation which results in a point source discharge that has no detrimental effects on the soils, vegetation or groundwater of a land treatment system."***

De plus, l'article 383.44 précise les paramètres des eaux usées en fonction de certains contaminants (DBO5, MES, et.).

> ***SPS 383.44 Parameters for POWTS components consisting of in situ soil. (1) EVALUATION. POWTS treatment and dispersal components consisting in part of in situ soil shall be evaluated in accordance with ch. SPS 385.***

> ***(2) INFLUENT QUALITY. (a) The quality of influent discharged into a POWTS treatment or dispersal component consisting in part of in situ soil shall be equal to or less than all of the following:***
>
> ***1. A monthly average of 30 mg/L fats, oil and grease.***
>
> ***2. A monthly average of 220 mg/L BOD5.***
>
> ***3. A monthly average of 150 mg/L TSS.***
>
> ***(b) The monthly average under par. (a) shall be calculated as the sum of all measurements taken over 30 consecutive days, with at least 6 measurements occurring on 6 separate days, and divided by the number of measurements taken during that period.***

Le texte de cet article nous laisse croire que tout bâtiment générant des eaux usées s'inscrivant dans ces paramètres est réglementé de la même façon. Nous n'avons pas trouvé de disposition spécifique pour des usages ou appareils particuliers (salon de coiffure, atelier de mécanique, adoucisseur d'eau, piège à matière grasse, etc.).

14.3 DENSITÉ MAXIMALE : Densité maximale des installations septiques

Les documents consultés ne traitent pas de la densité maximale ou de l'impact cumulatifs des installations septiques.

14.4 REJETS : Rejets en surface

Ce sujet n'est pas traité, tel que prévu dans le document d'appel d'offres.

14.5 CONTAMINANTS : Contaminants encadrés

Tel que mentionné au point 2 précédent, le règlement encadre certains contaminants (DBO5, MES et huile et graisse) (article 383.44). La notion d'influent/effluent porte toutefois à confusion alors qu'on réfère un peu par inversion à des paramètres d'influent du dispositif d'infiltration plutôt que de parler d'effluent du système de traitement primaire.

> ***SPS 383.44 Parameters for POWTS components consisting of in situ soil. (1) EVALUATION. POWTS treatment and dispersal components consisting in part of in situ soil shall be evaluated in accordance with ch. SPS 385.***
>
> ***(2) INFLUENT QUALITY. (a) The quality of influent discharged into a POWTS treatment or dispersal component consisting in part of in situ soil shall be equal to or less than all of the following:***
>
> ***1. A monthly average of 30 mg/L fats, oil and grease.***
>
> ***2. A monthly average of 220 mg/L BOD5.***
>
> ***3. A monthly average of 150 mg/L TSS.***
>
> ***(b) The monthly average under par. (a) shall be calculated as the sum of all measurements taken over 30 consecutive days, with at least 6 measurements occurring on 6 separate days, and divided by the number of measurements taken during that period.***

L'annexe au règlement contient un tableau qui dresse une liste de contaminants et de concentrations typiques des eaux usées résidentielles. Toutefois, ces éléments sont fournis à titre informatif seulement et ne sont pas repris ailleurs dans les règlements.

> ***A–383.43 (7) ESTIMATING CONTAMINANT LOADS.(Chapter SPS 383, Appendix)***
>
> ***Pathogenic contaminant load may be estimated based on data collected by a reputable testing or research facility.***
>
> **Typical Data on the Unit Loading Factors and Expected Wastewater Contaminant Loads from Individual Residences**

Contaminant	Unit Loading Factor lb/capita per day	Value		
		Unit	Range	Typical
BOD_5	0.180	mg/L	216–540	392
SS	0.200	mg/L	240–600	436
NH3 as N	0.007	mg/L	7–20	14
Org. N as N	0.020	mg/L	24–60	43
TKN as N	0.027	mg/L	31–80	57
Org P as P	0.003	mg/L	4–10	7
Inorg. P as P	0.006	mg/L	6–17	12
Grease		mg/L	45–100	70
Total Coliform		cfu/100mL	10^7–10^{10}	10^8

Il n'y a pas de norme qui encadre le phosphore, l'azote ou tout autre contaminant.

Le suivi de ces contaminants n'est pas spécifiquement prévu au règlement. Par contre, chaque installation septique doit faire l'objet d'un programme de suivi « management plan ». Ce document doit être déposé lors de la demande de permis. Le suivi exigé peut donc être minimal tel qu'une vidange de fosse, ou il peut comporter un suivi de pièce mécanique ou un échantillonnage à la discrétion des autorités selon la complexité du système de traitement.

> ***SPS 383.54 Management requirements. (1) MANAGEMENT PLAN. (a) The management plan for each POWTS shall include information and procedures for maintaining the POWTS to operate and function within the standards of this chapter and as designed and approved.***
>
> ***(b) The management plan for a POWTS shall be a part of the plan submittal under s. SPS 383.22 or 384.10.***
>
> ***(c) The management plan for POWTS shall specify all necessary maintenance and servicing information which may include, but is not limited to all of the following:***
>
> ***1. Accumulated solids or byproduct removal requirements.***
>
> ***2. Influent quantities and qualities and effluent quantities and qualities.***
>
> ***3. Metering, sampling and monitoring schedules and requirements.***
>
> ***4. Load and rest schedules.***
>
> ***5. Servicing frequency requirements.***
>
> ***6. Installation and inspection checklists.***
>
> ***7. Evaluation, monitoring and maintenance schedules for mechanical POWTS components.***
>
> ***8. Start up and shutdown procedures.***
>
> ***9. Procedure for abandonment.***
>
> ***(…)***

14.6 CERTIFICATION : Entité responsable d'effectuer la certification des différents intervenants et des technologies

L'installation des systèmes de traitement des eaux usées est un acte réservé aux plombiers certifiés par l'État. Cette certification s'obtient par la démonstration d'une formation ou d'une expérience équivalente et le paiement de frais d'adhésion.

> ***SPS 383.21 Sanitary permits.***
>
> ***(1) GENERAL. (a) Pursuant to s. 145.19, Stats., the installation or construction of a POWTS may not commence or continue unless all of the following have been fulfilled:[…]***
>
> ***4. Documentation that the master plumber or the master plumber–restricted service who is to be responsible for the installation or modification of the POWTS has completed approved training or has documentation that approved training will be provided during the installation of the POWTS, if the application for the sanitary permit involves one or more of the technologies or methods specified in s. SPS 383.04 (1).***

> ***WISCONSIN CODE CHAPTER 145***
>
> ***PLUMBING AND FIRE PROTECTION SYSTEMS AND SWIMMING POOL PLAN REVIEW***
>
> ***145.14 Plumbers license (restricted). […]***
>
> ***(2) Classifications. The classifications which the department shall use are a sewer services classification and an "appliances, equipment and devices" classification. Persons so classified may engage in the following types of work:***
>
> ***(a) Systems or services. Persons classified under this paragraph may install septic tanks for private on-site wastewater treatment systems, may install drain fields designed to serve such septic tanks, and may install sewer service from the septic tank or sewer extensions from mains to the immediate inside or proposed inside foundation wall of the building. Such persons may also install water services, stormwater use systems, and reclaimed water systems if the services or systems are to be located outside the foundation wall of the building.***

Le règlement 384 « Plumbing Products » fait référence à plusieurs normes de certification qui visent les fabricants de plusieurs composantes (conduites, robinets, solvants, etc.). Ceci-dit, ce qui nous concerne plus c'est la référence à la norme NSF40 pour les systèmes de traitement des eaux usées.

> ***(11) TANK LABEL. (a) Anaerobic treatment tanks. Each treatment tank which has an anaerobic treatment compartment shall be labeled with a permanent label located near an inlet or outlet opening of the tank. The label shall be embossed, impressed, or securely attached to the tank. The label shall include all of the following information:***
>
> ***1. Name or trademark of the manufacturer.***
>
> ***2. Capacity of each compartment of the tank or the manufacturer's model number.***
>
> ***(b) Aerobic treatment tanks. 1. Each aerobic treatment tank complying with NSF Standard 40 and listed by a nationally recognized ANSI accredited third party certified listing agency acceptable to the department shall be provided with 2 label plates. The labels shall conform with all of the following:***
>
> ***a. Label plates shall be inscribed to be easily read and understood, and be securely attached.***
>
> ***b. One label plate shall be attached to the front of the electrical control box and the second label plate shall be attached to the aeration equipment assembly, tank, or riser at a location normally subject to access during inspection of the unit.***
>
> ***c. Each label plate shall include name or trademark of the manufacturer, model number, and rated daily flow capacity of the unit.***

De plus, l'État peut autoriser des systèmes de traitement qui ne sont pas certifiés par un organisme de certification indépendant. Le protocole à suivre est décrit dans plusieurs articles, notamment dans le règlement 384 (article 384.50) et dans le règlement 383 (article 383.27).

> ***SPS 383.27 Experiments.***
>
> ***(1) The provisions of this chapter or ch. SPS 384 are not intended to prevent the design and use of an innovative method or concept for the treatment or dispersal of domestic wastewater which is not specifically addressed by this chapter, provided the experiment has been first approved by the department in accordance with s. SPS 384.50 (3).***
>
> ***(2) The department shall review a submittal of an experiment under this section with input from the technical advisory committee assembled under s. SPS 384.10 (3) (d).***
>
> ***(3) The protocol for a proposed experiment submitted to the department for consideration shall include all of the following:***
>
> ***(a) The experiment shall be supervised by a professional who has experience in small-scale wastewater treatment.***

> ***(b) The professional shall submit a vita of training and experience relative to small-scale wastewater treatment along with the application for the experiment.***
>
> ***(c) A proposal shall be submitted for the experiment that includes at least all of the following:***
>
> ***1. The purpose of the experiment.***
>
> ***2. The theory and science behind the proposed experiment including a description of the systems or processes to be used as part of the experiment.***
>
> ***3. The number of systems or components to be installed or modified as part of the experiment.***
>
> ***4. The identification of the initial sites, if known, that will take part in the experiment.***
>
> ***5. A letter of comment from the governmental unit or units where the experiment is to be conducted.***
>
> ***6. The data to be collected and the method to be employed to collect the data.***
>
> ***7. The duration of the proposed experiment.***
>
> ***(d) The experiment may not involve less than 5, and not more than 50 individual installations.***
>
> ***(e) An experiment shall be designed to provide definitive results within 5 years from the start of the experiment.***
>
> ***(f) An experiment on a site not previously developed shall include a contingency plan that provides for a code complying replacement POWTS, if the experiment fails to meet the required performance standards of this chapter.***
>
> ***(g) If the experiment is approved, the experimenter shall execute a signed agreement with the department setting forth the obligations of the parties.***
>
> ***(h) Within 6 months of the completion of the experiment, the results or conclusions shall be forwarded to the department.***

Il n'y a pas d'exigence précise au sujet des personnes qui effectuent le suivi des installations septiques.

La certification des professionnels en sols est également sous la responsabilité de l'État. Celle-ci requiert la réussite d'un examen et le paiement d'un frais d'ouverture de dossier. Les frais d'examen et de licence totalisent environ 400$. La période de validité de la certification est de 4 ans et le renouvellement nécessite l'atteinte d'objectifs de formation continue de 12 heures avant la fin de la période de 4 ans.

> ***SPS 385.10 Qualifications.***
>
> ***SOIL EVALUATION. A soil evaluation for treatment or dispersal of wastewater, treated wastewater, final effluent or nonwater–carried human wastes regulated by chs. SPS 383 and 391 shall be performed by an individual who is a certified soil tester. A soil evaluation for the treatment or dispersal of stormwater regulated under ch. SPS 382 shall be performed by an individual who is either a certified soil tester or one who holds a professional soil scientist license under ch. GHSS 4.***

Il n'y a pas d'autre disposition relative à la certification.

14.7 CAPACITÉ : Capacité des fosses septiques

La capacité minimale des fosses septiques n'est pas précisément déterminée dans les règlements consultés. Toutefois, elle peut être déterminée selon le calcul de l'article 383.43 du règlement. Nous n'avons pas pu trouver de précision à l'effet que la capacité des fosses est effective ou totale. Cependant, basé sur les autres états américains, nous croyons qu'il s'agit d'une capacité effective.

> ***SPS 383.43 General requirements.***
>
> ***(3) ESTIMATED DAILY COMBINED FLOW FOR A POWTS SERVING***
>
> ***A DWELLING. The estimated daily wastewater flow of combined graywater, clear water and blackwater from a dwelling shall be based on one or more of the following:***
>
> ***(a) The following equation:***
>
> ***100 gallons x B = F***
>
> ***Where: B = number of bedrooms, based on 2 persons per bedroom, unless otherwise approved by the department.***
>
> ***F = Estimated daily wastewater flow per dwelling per day (in gallons), excluding storm water discharges.***
>
> ***(b) A detailed estimate of wastewater flow based upon per capita occupancy or usage of the dwelling or per function occurrence within the dwelling.***

14.8 VIDANGE : Encadrement de la vidange des fosses septiques

Le règlement n'impose pas de fréquence de vidange selon le caractère annuel ou saisonnier d'une résidence. Il recommande plutôt une mesure de l'écume et des boues pour déterminer la nécessité de vidanger.

> ***SPS 383.54 Management requirements.***
>
> ***(3) SERVICING REQUIREMENTS.***
>
> ***(a) The management plan specified in sub. (1) shall reflect the servicing schedules of POWTS components as specified in this subsection***
>
> ***(b) The servicing frequency of an anaerobic treatment tank for a POWTS shall occur at least when the combined sludge and scum volume equals 1/3 of the tank volume.***

Par contre, selon des informations trouvées sur internet, il est recommandé d'effectuer la vidange des fosses à tous les 3 ans[20].

D'autre part, le propriétaire est responsable de rapporter tout entretien effectué sur son système de traitement à l'autorité compétente.

> ***SPS 383.55 Reporting requirements. (1)***
>
> ***(a) The owner of a POWTS or the owner's agent shall report to the governmental unit or designated agent at the completion of each inspection, evaluation, maintenance, or servicing event specified in the approved management plan.***

[20] http://www.wowra.com/Resources/Documents/WOWRA%20Homeowner%20Pamphlet.pdf

14.9 SUIVI : Nécessité de faire le suivi des installations septiques

Le suivi annuel des installations est obligatoire pour tout type de système (article 383.52). Toute installation dont le suivi et l'entretien n'est pas effectué selon les modalités prévues est considéré comme un danger pour la santé publique. L'autorité compétente peut ordonner toute inspection ou échantillonnage qu'il juge nécessaire.

> ***SPS 383.52 Responsibilities. (1) (a) 1. The owner of a POWTS shall be responsible for ensuring that the operation and maintenance of the POWTS occurs in accordance with this chapter and the approved management plan under s. SPS 383.54 (1).***
>
> ***2. The owner of a POWTS shall be responsible for ensuring that access opening covers remain locked or secured except for inspection, evaluation, maintenance or servicing purposes.***
>
> ***(b) The owner of a POWTS existing prior to July 1, 2000, shall be responsible for ensuring that the maintenance of the POWTS occurs in accordance with s. SPS 383.54 (4).***
>
> ***(c) 1. The owner of a POWTS, including a POWTS existing prior to July 1, 2000, shall maintain a maintenance contract with a POWTS maintainer or a business utilizing a POWTS maintainer for the POWTS as long as the POWTS is utilized and, if the management plan for the POWTS under s. SPS 383.54 (1) involves one or more of the following:***
>
> ***a. Evaluating or monitoring any part of the system at an interval of 12 months or less.***
>
> ***b. Maintaining any part of the system at an interval of 12 months or less.***
>
> ***2. The owner of a POWTS, including a POWTS existing prior to July 1, 2000, shall maintain a maintenance or service contract with a certified septage servicing operator under ch. NR 114 for the POWTS as long as the POWTS is utilized and, if the management plan for the POWTS under s. SPS 383.54 (1) involves the servicing of any holding, treatment or dispersal component at an interval of 12 months or less.***
>
> ***(2) A POWTS, including a POWTS existing prior to July 1, 2000, that is not maintained in accordance with the approved management plan or as required under s. SPS 383.54 (4) shall be considered a human health hazard.***
>
> ***(3) The activities relating to evaluating, monitoring and maintaining POWTS components after the initial installation of the POWTS in accordance with an approved management plan or as required by s. SPS 383.54 (4) (c) shall be conducted by a person who holds registration issued by the department as a registered POWTS maintainer.***

Dans le même esprit, les autorités doivent tenir à jour un inventaire des installations septiques sur leur territoire en vertu de l'article ci-dessous.

> ***SPS 383.255 Governmental inventory and maintenance program. (1) (a) 1. A governmental unit shall maintain an inventory of all POWTS located in its jurisdictional area.***
>
> ***2. The inventory shall be updated as existing POWTS are identified and new POWTS are installed or constructed.***
>
> ***(b) At a minimum, a POWTS inventory shall consist of all of the following elements:***
>
> ***1. Legal description of all properties including tax parcel number where a POWTS is located within the governmental unit jurisdictional area.***
>
> ***2. Name and address of the owner of each POWTS located within the governmental unit jurisdictional area. Note: The inventory does not require site visits, identification of the type of POWTS or an evaluation of the POWTS.***
>
> ***(2) (a) A governmental unit shall develop and implement a comprehensive POWTS maintenance program by October 1, 2019.***
>
> ***Note: Par. (a) is amended eff. 10-1-19 by CR 17-065 to read:***
>
> ***(a) A governmental unit shall be responsible for administering a POWTS maintenance program.***
>
> ***(b) At a minimum, a POWTS maintenance program shall consist of all of the following elements:***
>
> ***1. An inventory of all POWTS located within the governmental unit jurisdictional area.***
>
> ***2. A process that accepts and records inspection, evaluation, maintenance and servicing reports submitted by the POWTS owner or the owner's agent for POWTS listed in the governmental unit inventory.***
>
> ***3. A process that accepts and creates a record for each inspection, evaluation, maintenance and servicing report for a POWTS within the governmental unit jurisdictional area but not listed in the governmental unit inventory that is submitted by the POWTS owner or the owner's agent.***
>
> ***4. A process that notifies POWTS owners that are delinquent in submitting reports for inspection, evaluation, maintenance and servicing activities listed in ss. SPS 383.54 (3) and (4) and 383.55.***
>
> ***5. A process that includes measures meant to ensure that required inspection, evaluation, maintenance and servicing is performed and the results are reported to the governmental unit.***

> ***6. Reports summarizing the results of the maintenance program on an annual basis in a format requested by the department.***
>
> ***(3) A governmental unit shall make available to the department, upon request, any and all records necessary to ascertain compliance with this chapter and the provisions as specified in s. 145.20 (2) (i), Stats.***

Enfin, l'État lui-même a des responsabilités et doit agir de manière pro active dans le suivi des installations septiques (article 383.70).

> ***Subchapter VII — Department Performance Monitoring***
>
> ***SPS 383.70 Purpose. (1) To address the desire for an ongoing source of information on the performance of POWTS system designs, the department shall maintain an ongoing performance–monitoring program for the various POWTS methods and technologies. The monitoring program shall be in addition to the periodic inspection and monitoring of POWTS under subch. V.***
>
> ***The monitoring program shall be coordinated by the department in conjunction with the ongoing POWTS experimental and research program.***
>
> ***(2) The purpose of the performance monitoring program is to:***
>
> ***(a) Provide additional information on the long term performance of the various POWTS methods and technologies, to confirm their reliability, and to provide data for improvements; and***
>
> ***(b) Monitor the various methods and technologies relative to long–term compliance with the groundwater standards.***

14.10 RESTRICTIONS : Restrictions quant à la localisation des installations septiques

Le règlement encadre la localisation des composantes étanches et non étanches au tableau 383.43-1. Le règlement ne prévoit pas spécifiquement de distance par rapport aux sources d'approvisionnement en eau potable. Il réfère à un autre règlement (NR 812). Ce dernier prévoit des distances de 25 pieds (7,6 mètres) d'une composante étanche et de 50 pieds (15 mètres) d'une composante non étanche d'une installation septique.

Le tableau ci-dessous permet de constater l'absence de dégagement requis par rapport aux arbres, aux talus ou aux conduites de drainage mais l'introduction d'un dégagement par rapport aux piscines.

> ***(i) Site parameters and limitations. POWTS treatment, holding and dispersal components shall be located so as to provide the minimum horizontal setback distances as outlined in Table 383.43–1 as safety factors for public health, waters of the state and structures in the event of component failure.***
>
> ***Note: Chapter NR 812 establishes upslope location criteria for wells relative to contamination sources.***

Table 383.43–1
Horizontal Setback Parameters

Physical Feature	POWTS Treatment Component Consisting in Part of In Situ Soil or Dispersal Component	Exterior Subsurface Treatment Tank or Holding Tank Component	Forcemains Servicing, Suction Lines, and Pump Discharge Lines
Building	10 feet	5 feet[a]	none[b]
Property Line[c]	5 feet	2 feet	2 feet
Swimming Pool	15 feet	none[b]	none[b]
OHWM of Navigable Waters	50 feet	10 feet	10 feet
Water Service and Private Water Main	10 feet	10 feet	5 feet
Public Water Main	ch. NR 811	ch. NR 811	ch. NR 811
Well	chs. NR 811 & 812	chs. NR 811 & 812	chs. NR 811 & 812

OHWM = Ordinary High–Water Mark
[a] Except RV transfer tanks.
[b] See s. SPS 383.43 (8) (f) relative to accessibility.
[c] Road–right–of–way lines may be more restrictive than property lines.

Les règlements ne contiennent pas d'autre disposition relative à la localisation des installations septiques.

14.11 MILIEUX SENSIBLES :

À part les normes de localisation mentionnée dans le point précédent, les règlements consultés ne contienne pas de disposition relative à la protection des milieux sensibles tel que lacs, cours d'eau, milieux humides, boisés, fortes pentes, aquifère etc.

14.12 TOILETTES : Toilettes à compost, toilettes chimiques et toilettes à incinération

Le règlement 391 « Sanitation » inclut des modalités encadrant les toilettes à composte et à incinération. On ne retrouve pas d'encadrement pour les toilettes chimiques.

> ***SPS 391.10 Composting toilet systems.***
>
> ***(1) The materials, design, construction and performance of a composting toilet system shall conform to NSF Standard 41.***
>
> ***(2) All composting toilet systems shall be listed by a testing agency acceptable to the department. Note: Listing agencies acceptable to the department include the American Gas Association; Canadian Standards Association; NSF International; Underwriter's Laboratories; and Warnock Hersey.***
>
> ***(3) (a) Components for the storage or treatment of wastes shall be continuously ventilated. (b) Ventilation ducts or vents for the composting toilet system shall conform to s. SPS 382.31 (16). Note: See appendix for a reprint of portions of s. SPS 382.31 (16). (4) (a) The disposal of the compost shall be in accordance with 40 CFR part 503. (b) The disposal of any liquid from a composting toilet system shall be either to a public sanitary sewer system or a POWTS conforming to ch.***
>
> ***SPS 383. Incinerating toilets.***
>
> ***(1) The design, construction and installation of a gas−fired incinerating toilet shall conform to ANSI Z21.61.***
>
> ***(2) The materials, design, construction, and performance of an electric−fired incinerating toilet shall conform to NSF Protocol P157.***
>
> ***(3) All electric and gas−fired incinerating toilets shall be listed by a testing agency acceptable to the department. Note: Listing agencies acceptable to the department include the American Gas Association, Canadian Standards Association, NSF International, Underwriter's Laboratories, and Warnock Hersey.***
>
> ***(4) (a) The disposal of the end product shall be of in accordance with 40 CFR Part 503, Standards for the Use or Disposal of Sewage Sludge. Note: Materials relating to 40 CFR part 503, including, "Domestic Septage Regulatory Guidance: A Guide to the EPA 503 Rule", are available at epa.org. (b) The disposal of any liquid from an incinerating toilet shall be either to a public sanitary sewer system or a POWTS conforming to ch. SPS 383.***

14.13 PERMÉABILITÉ DU SOL :

Le règlement ne détermine pas de classe de perméabilité. La perméabilité du sol est déterminée en fonction de la texture et de la structure du sol uniquement. Le règlement ne réfère pas à un taux de percolation ou de conductivité hydraulique. Le tableau 383.44-2 permet d'établit un taux de charge hydraulique en fonction de chaque type de sol. De plus, le taux de charge hydraulique peut être adapté en fonction du niveau de traitement des eaux à infiltrer.

Selon le tableau de la page suivante, il n'y a pas de sol imperméable puisqu'un taux de charge hydraulique est déterminé pour de l'argile. Dans une telle situation, le système d'infiltration devra être conçu de manière adéquate, par exemple, avec une plus grande superficie et un système de distribution sous pression.

Les systèmes de traitement qui ont recours à un rejet en surface sont soumis à un processus d'autorisation supplémentaire à celui des systèmes de traitement avec infiltration. Ce processus d'autorisation relève du Département des ressources naturelles « Department of Natural Resources »[21].

> ***Small wastewater systems for the underground disposal of domestic wastewater are regulated by the Department of Safety and Professional Services (DSPS), unless that wastewater is discharged in a way that may reach surface water, in which case the design will likely also require review and approval by the Department of Natural Resources (DNR).***

Le règlement ne contient pas de disposition relative à la mise en place d'un système de traitement avec rejet en surface. Toutefois, nous comprenons que ce type de système est plus rare pour les projets résidentiels compte tenu, entre autres, des contraintes administratives supplémentaires à la mise en place d'un tel système.

Le recours aux fosses de rétention peut être restreint par les autorités locales. Autrement, cette solution en est une parmi d'autres sans restriction particulière.

> ***SPS 383.32 Prohibitions and limitations. (…)***
>
> ***(2) LOCAL PROHIBITIONS. (a) A municipality may by ordinance prohibit or limit the installation and use of the following technologies, designs or methods as POWTS components:***
>
> ***1. A holding tank.***
>
> ***2. A constructed wetland as a POWTS treatment component.***

[21] https://dnr.wi.gov/topic/wastewater/nondomestic.html

3. An evapotranspiration bed as a POWTS treatment component.

Le tableau suivant illustre comment certains taux de charge hydraulique sont prévus même pour des sols constitués principalement d'argile.

Table 383.44–2
Maximum Soil Application Rates Based Upon Morphological Soil Evaluation (in gals./sq. ft./day)

Soil Characteristics			Maximum Monthly Average			
Texture[d]	Structure[e]		BOD_5 >30 ≤220mg/L TSS >30 ≤150mg/L		BOD_5 ≤30 mg/L[c] TSS ≤30 mg/L[c]	
	Shape	Grade				
COS, S, LCOS, LS	—	0	0.7[a]	0.5[b,c]	1.6[a]	0.5[b]
FS, LFS	—	0	0.5		1.0	
VFS, LVFS	—	0	0.4		0.6	
COSL, SL	—	0M	0.2		0.6	
	PL	1	0.4		0.6	
		2, 3	0.0		0.2	
	PR, BK, GR	1	0.4		0.7	
		2, 3	0.6		1.0	
FSL, VFSL	—	0M	0.2		0.5	
	PL	2, 3	0.0		0.2	
	PL, PR, BK, GR	1	0.2		0.6	
	PR, BK, GR	2, 3	0.4		0.8	
L	—	0M	0.2		0.5	
	PL	2, 3	0.0		0.2	
	PL, PR, BK, GR	1	0.4		0.6	
	PR, BK, GR	2, 3	0.6		0.8	
SIL	—	0M	0.0		0.2	
	PL	2, 3	0.0		0.2	
	PL, PR, BK, GR	1	0.4[c]		0.6	
	PR, BK, GR	2, 3	0.6		0.8	
SI	—	—	0.0		0.0	
Soil Characteristics			**Maximum Monthly Average**			
Texture[d]	Structure[e]		BOD_5 >30 ≤220mg/L TSS >30 ≤150mg/L		BOD_5 ≤30 mg/L[c] TSS ≤30 mg/L[c]	
	Shape	Grade				
SCL, CL, SICL	—	0M	0.0		0.0	
	PL	1, 2, 3	0.0		0.2	
	PR, BK, GR	1	0.2		0.3	
		2, 3	0.4		0.6	
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	

Note a: With ≤60% rock fragments
Note b: With >60 to <90% rock fragments
Note c: Requires pressure distribution under sub. (5) (a)
Note d:
COS – Coarse Sand
S–Sand
LCOS – Loamy Coarse Sand
LS – Loamy Sand
FS – Fine Sand
LFS – Loamy Fine Sand
VFS – Very Fine Sand
LVFS – Loamy Very Fine Sand
COSL – Coarse Sandy Loam
SL – Sandy Loam
FSL – Fine Sandy Loam
VFSL – Very Fine Sandy Loam
L – Loam
SIL – Silt Loam
SI – Silt
SCL – Sandy Clay Loam
CL – Clay Loam
SICL – Silty Clay Loam
SC – Sandy Clay
C – Clay
SIC – Silty Clay

14.14 FORTES CONTRAINTES : Solutions pour les sites à fortes contraintes

Le règlement interdit la construction d'une installation septique dans une zone inondable (article 383.32).

> ***SPS 383.32 Prohibitions and limitations.***
>
> ***(c) Except as provided in ss. NR 116.12 (1) (e) and 116.15 (2) (b), no part of a POWTS may be installed in a floodway.***

Le règlement ne traite pas spécifiquement de solutions pour les terrains en rive ou littoral ou en zone inondable. La seule solution pour ce type de contraintes est celle d'une dérogation « variance ».

> ***SPS 383.24 Petitions for variance. (1) The department shall consider and may grant a variance to a provision of this chapter in accordance with ch. SPS 303.***
>
> ***Note: The petition for variance process is to allow the owner of a proposed or existing POWTS to ask the department's recognition of an alternative method or means for complying with the intent of a specific rule.***

Le règlement prévoit certaines dispositions permettant la construction d'un système de traitement par infiltration de type « champ de polissage » avec une épaisseur de sol naturel de 6 pouces, soit 15 centimètres. Dans un tel cas, un système de traitement avancé doit précéder le dispositif d'infiltration.

> ***SPS 383.44 Parameters for POWTS components consisting of in situ soil. […]***
>
> ***(3) INFILTRATIVE SURFACE.***
>
> ***(a) The infiltrative surface of unsaturated soil to which influent is discharged shall be located at least 24 inches above the estimated highest groundwater elevation and bedrock.***
>
> ***(b) 1. A POWTS designed utilizing a component manual recognized under s. SPS 383.60 (1) shall have at least 6 inches of the soil separation required under par. (a) consisting of an in situ soil type for which soil treatment capability has been credited under Table 383.44-3.***
>
> ***2. The purpose of the 6 inches of in situ soil under subd. 1. shall be to assure that the influent will be assimilated into the original subsurface soils without ponding on the ground surface.***

Selon notre compréhension, un sol naturel d'une épaisseur de 15 cm pourrait être compensé avec du sable filtrant jusqu'à atteindre l'épaisseur minimal de 60 cm requis. En utilisant du sable filtrant, il serait donc possible d'implanter un élément épurateur conçu selon les spécifications du règlement. D'ailleurs l'article 383.44 fait sommairement référence à l'utilisation de matériel de remblai.

> ***(6) ORIENTATION. (a) 1. The infiltrative surface of a distribution cell within a POWTS treatment or dispersal component consisting in part of in situ soil and located in fill material above original grade shall be level.***

D'autre part, de façon générale, il nous semble manifeste que les situations problématiques sur des sites à fortes contraintes (manque d'espace ou mauvaises conditions de sol) sont réglées par le processus de dérogation mentionné plus haut.

14.15 ÉTUDES : Études préalables et mise aux normes

Les règlements précisent les documents et études nécessaires à l'obtention d'un permis « sanitary permits ». D'ailleurs le règlement 385 est spécifique aux études de caractérisation de site « Soil and site evaluations ». Tout d'abord, l'article 383.21 du règlement dresse la liste des documents à fournir lors d'une demande de permis.

> ***SPS 383.21 Sanitary permits. (...)***
>
> ***(c) The application for a sanitary permit to the governmental unit shall be accompanied by all of the following:***
>
> ***1. At least one set of clear and legible plans and specifications delineating the information under s. SPS 383.22 (2) (a) 3. and (c).***
>
> ***2. A set of plans bearing the department's conditional approval and the approval letter issued by the department, if required to be reviewed by the department under s. SPS 383.22 (1).***
>
> ***Note: Nothing in this chapter is intended to prohibit the submission and acceptance of planning documents in an electronic or digital media.***
>
> ***3. Sufficient supporting information to determine whether the proposed design, installation, and management of the POWTS or the proposed modification to an existing POWTS conforms with this chapter.***
>
> ***4. Documentation that the master plumber or the master plumber–restricted service who is to be responsible for the installation or modification of the POWTS has completed approved training or has documentation that approved training will be provided during the installation of the POWTS, if the application for the sanitary permit involves one or more of the technologies or methods specified in s. SPS 383.04 (1).***
>
> ***5. Documentation that maintenance requirements for the proposed POWTS technology or method have been recorded with the deed for the property, if the management plan for the installation or modification under s. SPS 383.54 (1) involves one or more of the following:***
>
> ***a. Evaluating or monitoring any part of the system at an interval of 12 months or less.***
>
> ***b. Servicing or maintaining any part of the system at an interval of 12 months or less.***
>
> ***6. Any other information as specified by local ordinance relating to POWTS installations.***
>
> ***7. A fee as specified by the governmental unit.***

Les études requises doivent être réalisées par un consultant compétent au support de la demande de permis (article 385.10 du règlement 385).

> ***SPS 385.10 Qualifications.***
>
> ***(1) SOIL EVALUATION. A soil evaluation for treatment or dispersal of wastewater, treated wastewater, final effluent or nonwater–carried human wastes regulated by chs. SPS 383 and 391 shall be performed by an individual who is a certified soil tester. A soil evaluation for the treatment or dispersal of stormwater regulated under ch. SPS 382 shall be performed by an individual who is either a certified soil tester or one who holds a professional soil scientist license under ch. GHSS 4.***
>
> ***Note: Section SPS 305.33 delineates the qualifications and certification procedures for certified soil testers.***
>
> ***(2) SITE EVALUATION. A site evaluation, relative to the installation of a POWTS treatment, holding or dispersal component location, or to determine land slope or setback distances to topographic or other site features shall be performed by a Wisconsin registered architect, professional engineer, designer of plumbing systems, designer of private sewage systems or land surveyor; a certified soil tester or POWTS inspector; or a licensed master plumber or master plumber–restricted service.***

Les documents à fournir doivent inclure les données recueillies sur la nature du sol et la description du site tel que formulé à l'article 385.40 du règlement 385.

> ***SPS 385.40 Evaluation reports. (1) General. A soil evaluation report shall be prepared and submitted to the governmental unit having jurisdiction upon the completion of the evaluation and associated report form.***
>
> ***(2) Soil report certification and format. (a) Soil evaluation reports. Soil evaluation reports shall be prepared in a format specified by the department and this chapter.***
>
> ***(b) Certification. 1. Except as provided in subd. 2., each page of a soil evaluation report shall bear:***
>
> ***a. The signature of the certified soil tester who collected the data;***
>
> ***b. The certified soil tester's identification number; and***
>
> ***c. The date the report is signed.***
>
> ***2. When more than one sheet of a soil evaluation report is bound together into one volume, only the title sheet shall:***
>
> ***a. Be required to be signed, dated and bear the identification number of the certified soil tester who collected the data; and***

b. Clearly identify all other sheets comprising the bound volume.

(3) Report contents. (a) Site report. A site evaluation report shall include at least all of the following:

1. The site's legal description to within 40 acres.

2. The date the data was collected.

3. A legible and permanent site plan that complies with all of the following:

a. Is presented on paper no smaller than 8 ½ inches by 11 inches in size.

b. Is drawn to scale or fully dimensioned.

c. Shows the extent of the site evaluated for soil dispersal or treatment.

4. Location information for all points under investigation including structures, property lines and other encumbrances to the treatment or dispersal component placement on the site.

5. Pertinent elevation data, such as:

a. A reference to, and description of, a permanent vertical and horizontal reference point or bench mark from which all distances and elevations are delineated on the site plan;

b. The natural, undisturbed surface grade elevation for all soil profile excavations;

c. The percent and direction of land slope for the site under evaluation;

d. Ground surface contour lines at an interval appropriate for the conditions present;

e. The floodplain elevation, if established, and current surface elevation of any adjacent navigable waters or reservoir; and

f. The existing grade adjacent to the groundwater elevation observation pipe, the top of the observation pipe, and the bottom of the observation pipe.

(b) Soil report. A soil evaluation report shall include at least all of the following:

1. A site evaluation report pursuant to par. (a).

2. The date soil evaluations were conducted.

3. The site's legal description to within 40 acres.

4. Soil profile descriptions pursuant to s. SPS 385.30 for all soil profile evaluation excavations.

Le règlement prévoit que la procédure de demande de permis s'applique à la construction ou la modification d'une installation de traitement des eaux usées. L'article ci-dessous indique que la

mise aux normes selon la version courante du règlement est nécessaire lors de la modification d'un système existant.

> ***SPS 383.03 Application. (1) Installations. (a) New POWTS installations. The design, installation and management of a new POWTS shall conform with this chapter.***
>
> ***Note: Pursuant to s. 145.19 (3m) (b), Stats., the approval of a sanitary permit is based on the rules in effect on the date of the permit approval.***
>
> ***(b) Modifications to existing POWTS. A modification to an existing POWTS, including the replacement, alteration or addition of materials, appurtenances or POWTS components, shall require that the modification conform to this chapter.***
>
> ***Note: The modification of one part of a POWTS may affect the performance or the operation of other parts of the POWTS thereby necessitating further modifications for the `other parts' to be or remain compliant with the appropriate edition of the state plumbing code; see sub. (2) (b) 1.***
>
> ***(c) Modifications to existing structures served by existing POWTS. When an addition or alteration is proposed to an existing building, structure or facility that is served by an existing POWTS and the proposed addition or alteration will result in a change that affects the wastewater flow or wastewater contaminant load beyond the minimum or maximum capabilities of the existing POWTS, the POWTS shall be modified to conform to the rules of this chapter.***

14.16 AUTRES :

Éléments du Q-2, r.22 qui sont couverts par le territoire visé

Définitions	X
Hiérarchie du choix d'un système	
Obligation de vidange des fosses septiques	
Méthodes pour établir la perméabilité du sol	
Plages de perméabilité	
Référence aux normes BNQ/NSF	X
Normes de construction des fosses construites sur place	
Préfiltre	X
Norme spécifique au déboisement (élément épurateur classique)	
Conduite d'amenée, raccordements et ventilation	X
Champ d'application du Règlement/type d'eau	X
Prohibition de rejeter des eaux usées	X
Interdiction d'utiliser certains produits (désinfection de ces eaux usées)	
Conditions d'émission des permis (plan, études, etc.)	X
Implication d'un professionnel compétent pour la conception (Ordre professionnels)	X
Désaffectation des systèmes	X
Gestion des boues et des autres résidus	X
Cheminement des eaux et des effluents	
Normes de localisation pour les systèmes étanches et les systèmes non étanches	X
Normes techniques à respecter (matériaux, dimensions, etc.)	X
Conditions d'implantation des systèmes (pente, perméabilité, épaisseur de sol naturel, etc.)	X
Obligation d'entretien et/ou de maintenir un contrat d'entretien des systèmes certifiés	X
Normes de rejet des systèmes	X
Systèmes spécifiquement pour des résidences/bâtiments existants	
Toilettes à compost	X
Cabinet/toilettes sèches	X
Solutions si ségrégation des eaux (toilettes vs eaux ménagères) (ex : vidange périodique)	X
Déclencheurs/droits acquis pour la mise aux normes de systèmes existants	X
Dispositions encadrant les rejets au fossé/cours d'eau	
Déphosphatation	
Désinfection	X
Méthodes de prélèvement et d'analyse des rejets des systèmes	
Définit la responsabilité des municipalités pour l'application du Règlement	X
Amendes/infractions	X
Dispositions applicables à des territoires particuliers (Basse-Côte-Nord Iles-de-la-Madeleine, etc.)	

Éléments couverts par le territoire visé et qui ne sont pas traités dans le Q-2, r.22

- Suivi/entretiens annuel obligatoire pour tout type de système
- Inventaire de toutes les installations sur le territoire tenu à jour
- Processus de dérogation
- Possibilité de compenser un sol mince par ajout de remblai
- Installation réservée à des plombiers certifiés
- Inspection lors des travaux de construction par un fonctionnaire de l'autorité compétente

SOURCES Wisconsin:

1. *State of Wisconsin, Wisconsin Administrative Code, Chapter SPS 381, Definitions and standards, 2018*
2. *State of Wisconsin, Wisconsin Administrative Code, Chapter SPS 382, Design, construction, installation, supervision, maintenance and inspection of plumbing, 2016*
3. *State of Wisconsin, Wisconsin Administrative Code, Chapter SPS 383, Private onsite wastewater treatment systems, 2018*
4. *State of Wisconsin, Wisconsin Administrative Code, Chapter SPS 384: Plumbing products, 2018*
5. *State of Wisconsin, Wisconsin Administrative Code, Chapter SPS 385: Soil And Site Evaluations, 2018*
6. *State of Wisconsin, Wisconsin Administrative Code, Chapter SPS 391: Sanitation, 2018*
7. *State of Wisconsin, Wisconsin Administrative Code, Chapter 145 : Plumbing and fire protection systems and swimming pool plan review, 2020*
8. *State of Wisconsin, Department of Safety & Professional Services, Division of Safety and Buildings, IN-GROUND SOIL ABSORPTION COMPONENT MANUAL, 2012*
9. *State of Wisconsin, Department of Safety & Professional Services, Division of Safety and Buildings, AT-GRADE USING PRESSURE DISTRIBUTION COMPONENT MANUAL, 2012*
10. *State of Wisconsin, Department of Safety & Professional Services, Division of Safety and Buildings, MOUND COMPONENT MANUAL, 2012*
11. *State of Wisconsin, Department of Safety & Professional Services, Division of Safety and Buildings, HOLDING TANK COMPONENT MANUAL, 2012*
12. *Site internet official, State of Wisconsin, Department of Safety & Professional Services, https://dsps.wi.gov/Pages/Programs/PlanReview/POWTS.aspx*
13. *Site internet officiel, Wisconsin State Legislature, https://docs.legis.wisconsin.gov/code/admin_code/sps/safety_and_buildings_and_environment/380_387*