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MEMORANDUM

To: Legislative Committee on Administrative Rules

From: Ernest Christianson/Agency of Natural Resources

Subject: Presby Environmental, Inc. comments on 18-P51/Wastewater and Potable Water Supply Rules

Date: March 15, 2019

Dear Senator MacDonald and Members of the Committee,

During the February 21, 2019 meeting of LCAR, Presby Environmental, Inc. submitted testimony, and an accompanying letter, raising concerns with the proposed Wastewater System and Potable Water Supply Rules. These concerns centered on whether the Agency of Natural Resources had considered Presby's previously submitted comments on the Wastewater System and Potable Water Supply Rules (18-P51). Presby's letter does not pertain to the two associated rules from the Agency of Natural Resources also proceeding through rulemaking, the Indirect Discharge Rules (18-P53) and the Water Supply Rule (18-P52).

The Agency agrees with Presby that it excluded from its review comments Presby submitted during the public comment period. This failure was unintended and inadvertent, and the Agency appreciates this opportunity to address Presby's concerns. In this letter is information responding to Presby's questions and requests, followed by a list of changes to the Wastewater System and Potable Water Supply Rules for inclusion in the Adopted Rule. Also attached to this memo is an appendix identifying typographical and administrative errors the Agency would like to correct in the Adopted Rule.

The questions and requests from Presby's letter are quoted below, grouped into similar topics, and numbered. The word Rules is used in reference to the Wastewater System and Potable Water Supply Rules.

1. *Subchapter 1 – Purpose and Authority*
   "Suggest putting the following statement which was removed back into the purpose statements:
   'While implementing the purposes of these Rules, it is the express intent of the Department to encourage innovation, allow maximum flexibility in design, and minimize the amount of time necessary to process applications.'
   By including this in the text of the document, it ties back into the objective of expanding options for system design and shows the changes to the regulations are in good faith."

Response: During this rule revision, in order to increase reader comprehension of the Rules, the Agency worked to streamline the Rules to remove repetitive statements and unnecessary narrative. The Agency has determined that the statement Presby requests to be added to the Rules would have no regulatory effect and would repeat information that is already contained in the various purposes and sections identified in the Rules. It is therefore not necessary.

2. *Subchapter 2 – Definitions*
   "In the introduction sentence for this section, the statement "If a term is not defined, it shall have its common meaning" was removed. There are numerous terms throughout the document that are not defined. Some of these terms do not have a common or easily locatable definition such as "Class A Watershed". Also, for the purpose of providing clarity, we are requesting that the system types all be defined which include in-ground, at-grade, mound, and bottomless sand filter systems. A list of terms to consider adding is provided at the end of this correspondence."

   1-402 General Use Approval
   "Need to define General Use Approval. Should include the definition in section 201 or as an introductory paragraph under this section."

   § 1-403 Pilot Approval
   "Need to define pilot approval. Should include the definition in § 201 or as an introductory paragraph under this section."

   1-404 Experimental Approval
   "Need to define experimental approval. Should include the definition in § 201 or as an introductory paragraph under this section."

   "Terms to Define: We have taken the opportunity to identify terms used throughout the proposed regulatory language that are not included in §201. We are requesting that you give serious consideration to defining the terms below giving a brief description, referencing the terms used in the document, and emphasizing the terms minimum standards. The average American reads at a 7th or 8th grade level. It can be hard to reach that level in a complicated document like a regulation. Clearly defining, establishing minimum standards for the term used, and referencing where the terms are used in the document is essential in meeting the goal of writing on a level that most people can easily understand."

Response: Presby requests that over 50 additional definitions be added to the Rules.

The Agency reviewed the list of terms Presby requests to be defined in the Rules and agrees with Presby that defining the term "Class A waters" will add clarity to the Rules. The Agency will replace the Rules' reference to "Class A watersheds" with the term more commonly used by the Agency in other rules, "Class A waters," and to add the definition of Class A waters to the Rules. The Agency also will correct a typographical error; the term "biologic constituents" should be "biological constituents."

The Agency has determined that it would not increase comprehension of the Rules for definitions to be added for the remaining terms Presby requests to be defined. These are terms the Agency intends to be regarded as general terms or descriptive words rather than terms-of-art with a specific meaning. These terms are to be interpreted by their use in the rule provisions and do not carry a specific meaning for which a definition would be helpful. During this rule revision the Agency revised the list of defined terms, both removing terms that were not used in the Rules and adding definitions for terms that are used in a concrete way and benefit a reader to be defined. The Agency, similar to the legislature in drafting legislation, must make judgment calls as to what terms warrant definition and when defining a term is either unnecessary or would create more confusion than clarity. The Agency has determined that the set of terms defined in the Rules is sufficient if Class A waters is added.

Presby also requests that a statement be added to the Rules indicating that undefined terms take their common meaning. The statement that undefined terms take their common meaning is overly broad and inclusion of such a statement would not help a reader understand the Rules. It is not accurate that every word in the Rules is intended to be understood this way. Many words take a meaning conveyed by their use in the context of the sentence or paragraph in which they appear.

3. *§ 1-305 Applications for Permits*
"(n) Define the appeal process if an application is denied. This section should reference § 1-308 - Denial of an Application for a Permit, §1-502 – Appeal of Final Agency Decision, and § 1-501 - Administrative Reconsideration."

§ 1-308 Denial of an Application for a Permit
"Define the appeal process if an application is denied. This section should reference § 1-501 -Administrative Reconsideration and**,** §1-502 – Appeal of Final Agency Decision."

§ 1-401 Purpose and Decisions
"(d) Denials do not include a reference for appeal. Should also state the process for appealing a denial or refer to the section of the document that discusses the appeal process."

Subchapter 5 – Appeals; Enforcement
"All sections under this subchapter only reference permit applications; what about product approvals? Where is the language for the Appeals on that portion of the

regulations? Is the process the same or different? Need to ensure that an appeal process is outlined for the product approval process."

Response: These Rules do not establish the process by which one can appeal a permit denial or other Agency decision. As indicated in § 1-502, a person aggrieved by a final act of decision of the Secretary under the Rules may appeal to the Environmental Division of the Vermont Superior Court in accordance with 10 V.S.A., Chapter 220. This section is not specific to permit denials.

Administrative reconsideration by the Regional Office is distinct from an appeal of a decision to a court. When and by whom administrative reconsideration can be sought is identified in § 1-501.

Subchapter 5 is clearly titled "Administrative Reconsiderations; Appeals; Enforcement." Cross referencing this subchapter at various places in the Rules will clutter the Rules, will not increase understanding, and could create challenges in accurately interpreting these stand-alone provisions.

4. *§ 1-301 Permit Required*
"(a) Suggest including the exact title and/or document number of the permit form. Also, suggest providing direction on where to get the form."

§ 1-305 Applications for Permits
"(a)(1) Include the name of the form to be used and where it can be acquired."

§ 1-307 Required Notification of Presumptive Isolation Zones
In sections 307 (a) and (b) make reference to 'on a form' 'permit application', and 'permit amendment.' Need to cite the actual name of the "form" "application" and finally, state what constitutes an 'amendment'. Also, why would one not mail the form provided by the Secretary within 7 days of submitting the application instead of before submitting the application? This seems to make the process take longer."

§ 1-405 Application Process for Innovative/Alternative Systems and Components
"'on a form' and 'application form': What form? Specify the form to be used? Does the form actually exist or is it something that has yet to be developed? Where does one get this form? The way it is written, the Secretary will prepare the form for submission. May want to change this language if the Secretary isn't completing the application."

§ 1-406 Renewal Application Process for Innovative/Alternative Systems and Components
"Reference to 'application' and 'form': Specify application and form requirements. When is this done? Who does it? If the form does not yet exist, should it not exist prior to implementation of the rules? If so, change reference to "prepared by the Secretary" to the title of the form and where to access it."

Response: Forms are available on the Agency's Wastewater System and Potable Water Supplies website. The Agency's use of electronic forms continues to evolve. The Agency's website may also change while these Rules are in effect. It would not be helpful for the Rules to include a specific name for a form or reference a URL that may become obsolete. If an applicant or other person has any questions about which form corresponds to a provision in the Rules, they can contact the Regional Office staff. The requirement for notifications concerning presumptive isolation zones to be provided seven days in advance is in statute.

5. *§ 1-305 Applications for Permits*

"(b)(2)(A) Define the minimum standard/process needed to comply with permanent legal access. Does it have to be surveyed, recorded, drawn up by an attorney. . . ? Consider modifying the rule language to include §1-310 Filing of Permit"

"(d) What is the minimum standard for flagging? Consider revising the rule language to include a reference to §1-311."

Response: What constitutes permanent legal access is defined in the Rules. However, these Rules do not dictate the legal process by which someone obtains permanent legal access.

The Agency does not intend to establish prescriptive requirements for what constitutes flagging. The Agency regards the Rule text as sufficient. Common practices, include using colored tape attached to wooden stakes are sufficient methods of flagging.

6. *§ 1-306 Site Plans, Supporting Information, and Design Certification*

"(a) and (b) Having both sections (a) and (b) are somewhat repetitive. Suggest combining them into one as follows:
All site plans, detail sheets, accompanying narrative, and other supporting data for the design of a wastewater system or potable water supply that is required in a permit application shall be prepared, signed, and dated by a designer. The submitted permit application shall include a design certification by the designer that states: '*I hereby certify that, in the exercise of my reasonable professional judgement, the design related information submitted with this application is true and correct and the design included in this application for a permit complies with the Vermont Wastewater System and Potable Water Supply Rules'*"

Response: These subsections identified by Presby establish distinct requirements and should be listed separately. The designer signing the documents does not have to be the same designer as the designer who provides the design certification.

7. *§ 1-309 Permit Conditions*

"(b) Different sampling requirements are cited that may be needed to obtain a permit but the only one that the rule gives guidance to is water quality sampling. Suggest including more detailed information on what would be required under the other sampling protocols for each type of sampling you have listed. As an example: require x number of samples at x frequency. Sampling will be a composite sample or a grab sample. Samples must be

analyzed by a state certified lab etc. Our suggestion is to include a section on sampling protocols and reference that section in this paragraph."

Response: Presby asks for specific sampling requirements to be added to the Rules in a provision which indicates that "[a] permit for a wastewater system may be conditioned on the completion of a groundwater sampling, effluent sampling, water metering, and water quality program when the Secretary determines a program is necessary to detect potential contamination and degradation of groundwater or surface water." A permit condition that requires sampling will establish the specific sampling requirements necessary to detect potential contamination and degradation of groundwater or surface water in the circumstances specific to the site and project. The sampling requirements will be based on factors such as the potential contaminant of concern, specific reason sampling is necessary, and geological factors specific to the site. The sampling requirements cannot be generalized in this rule provision.

8. *Subchapter 4 – Approval of Innovative/Alternative Systems and Components*
"At what timeframe does an Innovative/Alternative system no longer classify as Innovative/Alternative? Is it 10 years of proven technology? 20 years of proven technology? The concept of something transitioning from Innovative/Alternative to mainstream should be addressed."

§ 1-403 Pilot Approval
"How long does something have to be under Pilot Approval before it can move up to General Use Approval?"

1-404 Experimental Approval
"How long does something have to be Experimental before it moves up to Pilot or General Use?"

Response: The decision of when to classify a technology as no longer innovative/alternative, and instead adopt specific technical standards for the technology is made at the time of revision of these Rules and is dependent on different factors including the type of technology, performance of the technology, and how the technology applies to the Rules at the time the Rules are being revised. There is no one time frame.

There is also no specific time frame to move from one particular type of approval to another. An application for a particular category of approval will be assessed based on whether it complies the with the criteria for approval identified in the Rules. Which type of approval to seek is determined by the applicant and will depend on factors such as the type of technology, performance of the technology, number of installations, and how the technology relates to the technical standards in the Rules.

9. *§ 1-401 Purpose and Decisions*
"(e) 'Manufacturers granted approval may seek renewal of approvals': The renewal process should be outlined. Do all systems have to re-apply for approval? Is continued approval automatic? What needs to be included in a "renewal package"? Provide more detail on the renewal process."

"(f) 'revocation of an approval': Define the difference between a denial and a revocation."

"(h)(4)(e) 'ensuring an adequate supply of trained individuals': What's the criteria for determining compliance with this rule? What is considered an 'adequate supply'?"

Response: Section 1-406 establishes the renewal application process.

Revocation refers to the Agency revoking, or a person voluntarily seeking to revoke, an approval that was previously granted by the Agency. Denial could occur at the time an approval is sought and means no approval is granted. These terms do not require definition in the Rules.

The Agency agrees that clarity is needed in terms of the number of trained service providers required for those systems and components which need inspections. The Agency concludes two is the minimum number of service providers that should be available. A subsection will be added to § 1-401 to clarify that at least two service providers are required.

10. *§ 1-402 General Use Approval*

"(a)(3) 'demonstrated reliability and performance': What is the criteria used to determine if a product has demonstrated acceptable reliability and performance? Section needs to be more specific on the expectations of what is required to meet this standard."

Response: The meaning of the phrase "demonstrated reliability and performance" is clarified by the remainder of the provision, including the requirement that an application include documentation of bench or field testing that meets specific requirements. Section 1-402 requires that a manufacturer demonstrate that "the innovative/alternative system or component is of demonstrated reliability and performance *for* its proposed use in soil and climate found in Vermont, *based* on its use elsewhere, such as other States or Canadian Provinces." (emphasis added here but not in Rules). The Section also requires that the application include documentation of "bench or field testing of the system or component at a certified laboratory and testing facility . . . that meets the requirements of § 1-407," the section which identifies specific standards that the bench or field testing must comply with.

An innovative/alternative wastewater system or component authorized for use in Vermont needs to be suitable for the weather conditions and soil conditions in Vermont. The expectation is that the applicant demonstrates that a system or component tested in an area outside Vermont will function in Vermont.

11. *§ 1-404 Experimental Approval*

"(d) Define monitoring, what type of monitoring is required, what is the monitoring frequency, what is being monitored?"

"(d)(2) For testing requirements, be more specific. What is the sampling protocol? What type of testing is to be done? Language leaves a lot up to the imagination."

Response: As stated in section § 1-404(d), the monitoring required will be the "type and frequency . . . necessary to demonstrate that the specific approved system or component is functioning as intended." The specific type and frequency of monitoring cannot be specified in the Rules because innovative/alternative systems and components are diverse. The Secretary will identify the type and frequency of monitoring necessary to demonstrate the technology is functioning as intended based on the particular innovative or alternative system or component and the technical standards in the Rules the use of the system or component is intended to replace.

12. *§ 1-405 Application Process for Innovative/Alternative Systems and Components*
"(5)(C) Change the number of known systems as not all states require as much recordkeeping by the manufacturer."

"(6)(B) 'plans and cross sections': Plans and cross sections should be defined to the extent that the minimum standards for plans and cross sections can be determined."

"(6)(F) "treatment must have sampling ports": Allow for the request of a waiver if system met treatment standards in bench testing."

Response: The Agency understands that not all states track or keep records of installations. The applicant needs to provide their records regarding the number of installations of their component or system in other jurisdictional locations.

An application for an innovative/alternative system or component requires plans and cross sections of the innovative/alternative system or component. Plans need to be legible and clearly depict the design of an innovative/alternative system or component. The level of specificity needed on plans and cross sections, including the scale in which they are provided, are dependent on the specific innovative/alternative system or component. The Agency does not identify specific criteria due to the variety of innovative/alternative systems and components.

Subsection (6)(F) indicates that an application for approval of an innovative/alternative system or component must include "[f]or systems and components intended for treating of wastewater, the location of sampling ports for samples for analysis for the treated wastewater." For systems and components that treat wastewater, sampling of the wastewater is required to confirm an innovative/alternative system or component is meeting its effluent limits or other performance expectations.

13. *§ 1-406 Renewal Application Process for Innovative/Alternative Systems and Components*
"(4) Suggest changing to 'manual updates as needed to conform to state rules and depict rule exemptions provided by the state approval.'"

"(7) Reference to 'the monitoring of the distribution of the innovative/alternative system or component" and reference to 'annual reporting requirements': Be more specific. What are manufacturers monitoring for? Are the annual reporting requirements defined? What are the minimum requirements needed to comply?"

Response: Subsection (4) requires an applicant to submit "[a]ny updates needed for Vermont-specific manuals and design drawings so that they are in compliance with these Rules." A manual or design drawing only need to be submitted if there have been changes to the system or component from the previous approval.

The confirmation referenced in Subsection (7) is specific to the conditions included in an approval letter for a specific innovative/alternative system or component. As indicated in Subsection (7), those conditions may include monitoring and annual reporting requirements.

14. *§ 1-801 Basic Requirements*

"Suggest organizing item in this section by whether it is wastewater or potable water and avoid intermingling them for ease of reading."

"(a) & (c) Reference to a 500' distance from building containing water/wastewater service and building utilizing that service. Why is there a limit on the distance to a building with service on the same lot?"

Response: The organization of § 1-801 was chosen purposefully to arrange together like requirements that pertain to both wastewater systems and potable water supplies.

Subsections (a) and (c), where referencing 500 feet, allows a building or structure that is not connected to a wastewater system and a potable water supply to be occupied provided there is a nearby wastewater system or potable water supply that would be able to accommodate the occupants of the other building or structure. 500 feet is a reasonable distance to protect public health and the environment.

15. *§ 1-803 Design Flows*

"Table 8-1 There is a typo for 13 Living Units Wastewater System GPD listed as 3848. Should be 3484 as that is what it was in previous regulations."

"Note at the end of the section references high strength wastewater, recommend referencing § 1-805."

Response: The Agency agrees this is a typographical error in Table 8-1 and will change 3848 to correctly read 3484.
The note is not a regulatory provision. The note was included only to ensure designers understand that many uses on Table 8-3 could generate high strength wastewater and that a designer may want to consider that when designing a wastewater system although the Rules do not require, with the exception of use as a brewery, the wastewater strength to be taken into account.

16. *§ 1-902 Replacement Area*

"(b)(1), (2), and (3) Wastewater systems designed to protect the soil interface from biomat formation should not be required to have a separate replacement area. Suggest inclusion of a section for exemption from replacement area if system is designed to protect the receiving surface from biomat formation."

Response: The Agency interprets this question to ask about innovative/alternative wastewater systems. Innovative/alternative wastewater systems are systems that do not strictly comply with each technical standard in Subchapter 9; they are designed in an alternative or innovative way and must comply with the purpose of each technical standard in Subchapter 9. Review of whether a replacement area is needed for an innovative/alternative wastewater system will occur during review of an applicant's innovative/alternative wastewater system design if the applicant choose to include no replacement area.

17. *§ 1-903 General Requirements for Soil-Based Wastewater Systems*

"(d)(4) 'Ground slope for a bottomless sand filter shall not exceed 5%': In-ground is 30% and at-grade is 20%. Why are bottomless sand filters held to a different standard? Change to 20% or 30% depending on installation depth."

Response: The Agency spent considerable time creating standards for the construction of bottomless sand filters in Vermont as an alternative to a leachfield in a mound. Bottomless sand filters can only be constructed on slopes of 5 percent or less because the timbers used in the construction of the filter enclosure cannot generally be located below finish grade. Additionally, unlike mound systems, a bottomless sand filter does not include fill material downslope of an enclosure to transmit effluent but is dependent on transmitting effluent within the limits of the enclosure. Bottomless sand filters are new methods for wastewater treatment and disposal that have proven effectiveness but were not previously incorporated into the Rules as a standard wastewater system design. The Agency's decision is to allow the construction of bottomless sand filters on slopes of 5 percent or less and observe the construction and performance.

18. *§ 1-903 General Requirements for Soil-Based Wastewater Systems*

"(h)(1) and (2) What is a Class A watershed? Setting a design flow maximum per site at 1000 gpd. Class A watershed is not defined. Unable to find anything on VT NRCS that defines Class A watersheds. How is a designer/installer supposed to know if they are in a Class A Watershed? Is this saying that no system over 1,000 gpd is allowed? Does this mean that no one can build anything on these sites that require more than 1,000 gpd? Are there alternative options? What are the alternatives?"

Response: As indicated above, the Agency agrees the reference to Class A watersheds warrants clarification. The Agency will modify the text to refer to Class A waters rather than watersheds and clarify that the limitation concerns wastewater systems located in watersheds that drain into waters classified as Class A in the Vermont Water Quality Standards. This limitation is from statute, 10 V.S.A, Chapter 47, and prohibits wastewater systems greater than 1,000 gallons per day.

19. *§ 1-903 General Requirements for Soil-Based Wastewater Systems*

"(i)(2) Request adding a statement regarding non-mechanical systems receiving a reduction to 18" if disposing of filtrate effluent prior to contact with the receiving soils."

"(j)(3) Does mound fill material differ from fill material? If yes, then include a definition for mound fill material in section 201."

"(r)(A)(iii) Why are bottomless sand filters limited to 1,000 gpd flow? They should be limited to the amount based on if they are in-ground, at-grade, or mound."

Response: Non-mechanical systems that are designed to treat wastewater to comply with filtrate effluent are innovative/alternative wastewater systems that are reviewed pursuant to Subchapter 4. Section 1-903 provides the soil requirements for leachfields disposing of filtrate effluent.

Fill material is intentionally used as a general term in the Rules; its meaning varies depending on the context in which it is used and it is intended to be interpreted in context. Generally speaking, it means material that has been added rather than naturally occurring. Mound fill material is a particular type of fill material relevant to the design of leachfields in mounds. The technical standards in the Rule that are required for various uses of fill material identify the specific requirements fill must meet in particular designs (e.g., type of material, size of particle, weight).

Subsection (r)(A)(iii) does not limit a bottomless sand filter to less than 1000 gallons per day design flow. The subsection says a designer may not calculate the induced water table beneath a bottomless sand filter using the simplified method in § 1-927 when the design flow is 1000 gallons per day or more.

20. *§ 1-904 Filtrate Effluent*

"(b) Requires pressure distribution to reduce application rate for leachfield sizing. Passive systems designed to include the process of converting influent to filtrate effluent are given a disadvantage even when meeting NSF/ANSI Standard 40. Suggest modifying text to read as follows:

When a wastewater system designed to dispose of filtrate effluent is designed using pressure distribution pursuant to § 1-914, or passively disperses treated effluent certified to NSF/ANSI Standard 40, the wastewater systems may use up to twice the application rate of soil for sizing the leachfield required by § 1-911."

Response: The Agency interprets this request to be about innovative/alternative wastewater systems because passive designs are innovative/alternative designs. Innovative/alternative wastewater systems are systems that do not strictly comply with each technical standard in Subchapter 9; they are designed in an alternative or innovative way and must comply with the purpose of each technical standard in Subchapter 9. Review of a passive design for a wastewater system will occur during review of an individual innovative/alternative wastewater system design. The proposed language is also not relevant to filtrate effluent, which is the topic of § 1-904.

21. *§ 1-907 2-year Time of Travel Management Zone*

"(c)(4) Suggest changing 'effluent' to 'septic tank effluent'"

Response: Subsection (c)(4) is not specific to septic tank effluent. The use of the term "effluent" in this subsection refers to more than just effluent discharging from a septic tank and is defined by its use in the context of the subsection.

22. *§ 1-908 Septic Tanks*

"(b)(7) Effluent filters should not be required for NSF/ANSI 40 certified passive treatment system tested without filters. Reason being that unmaintained filters obstruct air flow within the system. Suggest including an exemption for NSF/ANSI Standard 40 systems tested without effluent systems for the purpose of increased air flow for system ventilation to ensure adequate aerobic treatment; this will also ensure that the NSF/ANSI tested systems are used in the manner in which they were tested."

"(b)(7) Define the minimum standard for effluent filters."

Response: The Agency interprets this request to be about innovative/alternative wastewater systems because passive designs are innovative/alternative designs. Innovative/alternative wastewater systems are systems that do not strictly comply with each technical standard in Subchapter 9; they are designed in an alternative or innovative way and must comply with the purpose of each technical standard in Subchapter 9. Review of a passive design for a wastewater system will occur during review of the innovative/alternative wastewater system design.

The minimum standards for effluent filters are those identified in Subsection (b)(7). As a result of this comment the Agency will modify the wording of Subsection (b)(7) to make the provision easier to understand.

23. *§ 1-910 Soil Evaluation*

"(c) The number of evaluations stated are based on 600 gpd or less; what happens if treatment is going to be for more than 600 gpd? This should also be outlined. Suggest including the number of required soil excavations for all possible sizes exceeding 600 gpd."

"(c)(2) Why do bottomless sand filters require 3 soil excavations? Testing should not be based on the type of technology used but on the technologies' application to the site, i.e. in-ground, at-grade, or mound. Suggest modifying the requirement for additional evaluations for bottomless sand filters to be based on the installation configuration, i.e. at-grade, in-ground, or mound."

Response: The number of soil test pits required in the Rules has always been established as a minimum number required to identify the soil on a particular site and the Rules give the Secretary the ability to increase or decrease the number required based on the consistency of soil and other site-specific factors. The design flow of a proposed wastewater system is not directly relevant to how many test pits are necessary to identify the soil that exists on a site and the site-specific nature of soil identification does not lend itself to more prescriptive regulations.

The Rules establish a minimum of three soil test pits for mounds and bottomless sand filters because two of the soil test pits describe the soil beneath the leachfields and the third soil test pit is in the 25-foot downslope direction of the mound or bottomless sand filter to confirm suitable soil.

24. *§ 1-911 Maximum Application Rates for Leachfields*

"(b) Why is the maximum application rate for the bottomless sand filter technology different?"

"Table 9-3 Bottomless sand filters sizing are not applicable in soils past loam. Suggest setting same as in-ground or at-grade loading rates depending on the application of the technology."

Response: The application rates in Table 9-3 for sizing a bed in a bottomless sand filter are the same as for sizing an in-ground bed or at-grade leachfield. The Rules restrict the construction of bottomless sand filter to soil that is loam or coarser.

25. *§ 1-914 Dosing and Pressure Distribution*

"(a)(1) Dosing is required when system proposes more than 500 linear feet of distribution piping. Request modification to include the following additional language:
(3) Designs utilizing proprietary treatment products may not require dosing or pressure distribution per the manufacturer's approved design and installation manual."

Response: The Agency interprets this request to be about innovative/alternative wastewater systems because a proprietary product is necessarily an innovative/alternative design and would not be addressed in the technical standards that apply to all wastewater systems. As indicated above, innovative/alternative wastewater systems are systems that do not strictly comply with each technical standard in Subchapter 9; they are designed in an alternative or innovative way and must comply with the purpose of each technical standard in Subchapter 9. Review of a proprietary product for a wastewater system will occur during review of the innovative/alternative wastewater system design.

26. *§ 1-916 Flow Equalization*

"(c)[(2)] This requires that systems that use flow equalization must be pressure distributed. Not all technologies require flow equalization devices based on daily design flow but instead equally distribute flow throughout the design configuration. Language proposed must understand that some systems require pressure distribution, and some do not. Request modifying the language to include the following statement: 'unless otherwise specified in the manufacturer's approved design and installation manual.'"

Response: Flow equalization is when a leachfield receives an equal quantity of effluent daily. The Rules require use of pressure distribution and time dosing to achieve this result. The Agency interprets this request to be about innovative/alternative wastewater systems. As indicated above, innovative/alternative wastewater systems are systems that do not strictly comply with each technical standard in Subchapter 9; they are designed in an alternative or innovative way and must comply with the purpose of each technical standard in Subchapter 9. Review of whether an innovative/alternative wastewater system that uses flow equalization requires pressure distribution will occur during review of the innovative/alternative wastewater system design.

27. *§ 1-917 In-ground Trenches and Trenches in Mounds*

"(a)(2)(C) Request allowing for a 50% increase in AR if effluent is treated to secondary

standards."

"(c)(3)(A) Request adding an exemption for septic tank effluent that is treated to secondary standards prior to reaching the receiving soils."

"(c)(6) Include approved proprietary products statement such as:
(D) Approved distribution piping as specified in a proprietary products' approved installation and design manual."

§ 1-918 In-ground Beds and Beds in Mounds and Beds in Bottomless Sand Filters
"(a)(1)(C) Request allow for a 50% increase in AR if effluent is treated to secondary standards."

"(b)(5); Include the statement 'unless otherwise specified by the manufacturer of a proprietary product.'"

"(b)(7) Include the statement 'unless otherwise specified by the manufacturer of a proprietary product.'"

"(c)(1)(A) Add exemption for septic tank effluent that is treated to secondary standards prior to reaching the receiving soils."

"(c)(2)(A) Add exemption for septic tank effluent that is treated to secondary standards prior to reaching the receiving soils."

"(c)(11) Include 'unless otherwise specified by the manufacturer of a proprietary product.'"

§ 1-919 Additional Design Requirements for In-Ground Leachfields
"(b) Add exemption for septic tank effluent that is treated to secondary standards prior to reaching the receiving soils."

"(e)(1) Include the following statement "or treated to secondary standards prior to contact with the receiving soils.'"

§ 1-920 At-grade Leachfields
"(c)(2) add exemption for septic tank effluent that is treated to secondary standards prior to reaching the receiving surface."

"(f)(6) include 'or utilize effluent treated to secondary standards.'"

"(f)(12)(A) Include 'or for proprietary products, designed in accordance with manufacturers state approved design and installation manual.'"

28. *§ 1-921 Leachfields in Mounds*

"(c) Use of curtain drains exemption for effluent treated to secondary standards. Include an exemption for treated effluent such as: or utilize effluent treated to secondary standards"

"(3)(1) & (2) No sizing reduction provided for effluent treated to secondary treatment levels include the following statement: Allow for a 50% increase in AR if effluent is treated to secondary standards prior to contact with the receiving soils."

"(f), (h), and (C); Sizing reduction needed for effluent treated to secondary standards. Allow for a 50% increase in AR if effluent is treated to secondary standards prior to contact with the receiving soils."

"(j) Should not require pressure distribution if system is a proprietary product installed in a mound configuration if that proprietary product treats effluent to secondary standards without pressure distribution. Include the following language: 'if treatment products were tested without pressure distribution, pressure distribution will not be required unless otherwise specified by the manufacturer of a proprietary product.'"

29. *§ 1-922 Leachfields in Bottomless Sand Filters*

"(c) include the following 'unless effluent is treated to secondary standards prior to contact with the receiving soils, at which time, a 50% increase may be applied to the system application rate.'"

Response: The Rules do not include "secondary standards" for wastewater systems although they do define filtrate effluent (effluent treated to reduce biochemical oxygen demand and total suspended solids specific parameters) and include requirements for wastewater systems designed to dispose of filtrate effluent. Sections 1-903 and 1-904 specify the soil and design requirements, including the application rates, for different types of leachfields designed to dispose of filtrate effluent. The standard application rates for each type of leachfield is identified in § 1-911. Pursuant to § 1-904, a wastewater system designed of filtrate effluent "may use up to twice the application rate of soil for sizing a leachfield required by § 1-911."

The Agency interprets the requests concerning alternative methods to achieve filtrate effluent to ultimately be about innovative/alternative wastewater systems. The Agency also interprets the requests about proprietary products to be about innovative/alternative wastewater systems because a proprietary product is necessarily an innovative/alternative design and would not be addressed in the technical standards that apply to all wastewater systems. As indicated above, innovative/alternative wastewater systems are systems that do not strictly comply with each technical standard in Subchapter 9; they are designed in an alternative or innovative way and must comply with the purpose of each technical standard in Subchapter 9. Review of an innovative/alternative wastewater system design will be conducted pursuant to Subchapter 4.

30. *§ 1-920 At-grade Leachfields*

"(f)(7) Why are in ground systems limited to 2000 gpd but at-grade systems can go to 3,000 gpd? What about system designs that split flow equally between multiple beds? Then it is not dual alternating but simply multiple bed distribution. Modify requirement

for 'dual alternating' leachfields to include other design layouts that provides the same benefit such as multiple bed distribution that distributes the flow equally between all beds."

Response: At-grade leachfields, when designed to dispose of 3000 gallons of effluent per day, require two leachfields designed to dispose of the daily design flow. The design of a single bed leachfield is limited to 2000 gallons per day and allows for the use of multiple beds to distribute the effluent when the design flow exceeds 2000 gallons per day. There is consistency among the requirements for the two types of leachfields.

The Agency also interprets the request concerning alternative design layouts to ultimately be about innovative/alternative wastewater systems. As indicated above, innovative/alternative wastewater systems are systems that do not strictly comply with each technical standard in Subchapter 9; they are designed in an alternative or innovative way and must comply with the purpose of each technical standard in Subchapter 9. Review of an innovative/alternative wastewater system design will be conducted pursuant to Subchapter 4.

31. *§ 1-922 Leachfields in Bottomless Sand Filters*

"(e)(1) Change 'shall use' to 'may use'. Bottomless sand filters (BSF) need to be better defined to determine the necessity of this recommendation/requirement. Are all BSF in mounds required to be pressure distribution systems like would be required of a leachfield in a mound?

Response: Subsection (e)(1) requires that "[t]he design of bottomless sand filters shall use time dosing that complies with § 1-915." This is not intended to be optional. To the extent that this request concerns innovative/alternative wastewater systems, as indicated above, innovative/alternative wastewater systems are systems that do not strictly comply with each technical standard in Subchapter 9; they are designed in an alternative or innovative way and must comply with the purpose of each technical standard in Subchapter 9. Review of an innovative/alternative wastewater system design will be conducted pursuant to Subchapter 4

The following changes will be made to the Wastewater System and Potable Water Supply Rules in response to Presby's input:

- § 1-401(c) will be modified to add as a new (3) "requirements for the manufacturer of the innovative/alternative system or component to maintain at least two manufacturer trained and approved service providers, when inspections are required to be completed" and to make the current subsection (3) into subsection (4). Subsection (2) will be modified to read "submitted to the Secretary when necessary to confirm" in place of "submitted to the Secretary to confirm."

- § 1-405(3)(B) will be modified to replace "biologic constituents" with "biological constituents."

- Table 8-1 will be modified to correct an error in the design flow associated with 13 living units. The design flow associated with wastewater systems will be modified from 3848 to 3484 gallons per day.

- § 1-903(h) will be modified to replace "For wastewater systems in Class A watersheds" with "For wastewater systems located in a watershed that drains into a water classified as Class A in the Vermont Water Quality Standards."

- § 1-908(b)(7) will be edited to replace "received NSF/ANSI 46 certification or other similar third-party testing results that is accepted by the Secretary on a case-by-case basis" with "has NSF/ANSI 46 certification or has completed other similar third-party testing that is accepted by the Secretary on a case-by-case basis."

Ernest Christianson
Program Manager
Agency of Natural Resources

c: Presby Environmental, Inc.

Appendix to Memorandum:
Typographical and Administrative Corrections for Wastewater System and Potable Water Supply Rules

1. Table of Contents, add § 1-1010.
2. Table of Contents, § 1-1209, change page reference from 2111 to 211.
3. Table of Contents, remove extra space after "Examples B-1."
4. § 1-302(a)(1), (3), (4), (5) and (6), change semicolons to periods, and remove "and" after (5).
5. § 1-304(12), correct lettering, presently repeats the letter B.
6. § 1-304(15)(C), replace "residence to include a child care facility" with "residence to also be a child care facility" for consistency with (16).
7. § 1-304(21), correct "Subsection (18)" to "Subsection (19) or in Subsection (20)."
8. § 1-304(22), correct "Subsection (19)" to "Subsection (19) or in Subsection (20)."
9. § 1-304(33)(C), replace the semicolon with a period.
10. § 1-801, add a missing space between subsections (h) and (i).
11. § 1-805(d)(1), place colon after "where."
12. § 1-903(d)(3)(A), change "The" to "the."
13. § 1-903(i)(2), (l), (m)(5), (q)(1), (u), change "§ 1-904(c)" to "§ 1-904(a)."
14. § 1-903(l)(3)(B), change colon to semicolon.
15. § 1-905(c)(2)(E), add an "and" after the semicolon.
16. § 1-905(e)(4)(B), change "§ 1-904(c)" to "§ 1-904(a)."
17. § 1-908(b)(7)(B), modify to read "has NSF/ANSI 46 certification or has completed other similar third-party testing that is accepted by the Secretary on a case-by-case basis."
18. § 1-910(i)(1)(A), replace semicolon with period.
19. § 1-912, Table 9-5, correct distance of 5020 feet to read 50 feet.
20. § 1-917(a)(4)(B), change "§ 1-904(c)" to "§ 1-904(a)."
21. § 1-917(c)(4)(B), correct "a soil texture of coarse sand or sand" to be "a soil texture of very coarse sand or coarser."
22. § 1-918(b)(7), add a line before § 1-918(c).
23. § 1-918(c)(2)(B), correct "a soil texture of coarse sand or sand" to be "a soil texture of very coarse sand or coarser."
24. § 1-919(c)(3), correct "complying soil below the limiting soil" to be "complying soil above the limiting soil."
25. § 1-919(e)(5), change "§ 1-904(c)" to "§ 1-904(a)."
26. § 1-920(c)(1), replace semicolon with a period and delete "and."
27. § 1-921, add a space between (a) and (b).
28. § 1-921(f), add colon after "provided."
29. § 1-922(f), replace the semicolon after (1) and (2) with a period and delete "or" at the end of (1).
30. § 1-923(c)(1), change "§ 1-904(c)" to "§ 1-904(a)."
31. § 1-928(e)(6), add an "and" after semicolon.
32. § 1-930(b)(1)(A) and (B), change "Complies" to "complies" and "Maintains" to "maintain."
33. § 1-1004(f), change the period after "material" to a colon.
34. § 1-1004(h), change the period after "procedures" to a colon.

35. § 1-1107(b)(3), add “and” after semicolon.
36. Table 11-1, remove the last row “Wells that are not potable water sources (e.g., irrigation wells, geothermal wells)” which was erroneously included.
37. § 1-1110(b)(2)(C)(ii)(I), add an “and” after semicolon.
38. § 1-1113(c)(3), add Laboratory after Department of Health.
39. § 1-1113(c)(4), delete Laboratory after Department of Health.
40. § 1-1113, Table 11-5, correct standard of 0.020 to 20 as indicated elsewhere in Rules.
41. § 1-1202(c)(1), (2), (3), and (4), change first word from capital to lower case.
42. § 1-1203, add a space between (a) and (b).
43. § 1-1204(b)(2)(A), add a colon after “and.”
44. § 1-1205(b)(1), change the semicolon to a period and delete “and.”
45. § 1-1205(f)(4), remove the strike out from the semicolon.
46. § 1-1205, change (j)(5)(E) to become (j)(6).
47. § 1-1207(c)(2), delete the empty (A).