

CDPHE Regulation 43 Updates, Required Changes to Local Regulation and Local Opt-Ins:

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Section 43.26 Statement of Basis, Specific Statutory Authority and Purpose: March 10, 2025 Rulemaking, Effective June 15, 2025

The provisions of sections 25-10-101 through 113, C.R.S. provide the specific statutory authority for adoption of this regulation. The Commission also adopted, in compliance with section 24-4-103(4), C.R.S., the following statement of basis and purpose.

Basis and Purpose

The March 10, 2025 Commission hearing culminated efforts of an extensive stakeholder process. Stakeholders from all sectors of the onsite industry including, regulators, practitioners and manufacturers collaborated on, reviewed, and provided comment on the proposed revisions to Regulation 43.

The adoption of Regulation 43 in June of 2013 was the first major revision to the prior regulations since 1994. The Commission's purpose in adopting Regulation 43 was to reflect current standards applied to the On-site Wastewater Treatment System industry and to provide more options and flexibility in design and local regulation. In addition, the Commission intended to periodically review and incrementally improve the regulation for local implementation in counties having a range of resources available to their local programs. The revisions to Regulation 43 in 2017 and 2018 provided both clarifications and addressed perceived conflicts within various sections of the regulation that were identified to the first few years the regulation was administered. The intent of these current revisions of Regulation 43 was to continue the alignment of our OWTS regulation with accepted industry standards. Additional items included updating references to the most recent versions of technical standards, clarify general prohibitions and permitting requirements, and expanding on OWTS design requirements. Other various sections throughout the regulation were modified to provide clarity of the intent of that specific section as well as the overall regulation to assist with local implementation.

Section 43.3

New definitions for the following terms were added or modified to assist in the clarification or modification of regulatory requirements in other sections: alteration, disinfection, groundwater condition, gulch – dry, limiting layer, manufactured media – enhanced, professional engineer, restrictive layer, systems maintenance provider, transfer of title inspector, and watercourse:

The definition of “alteration” was added to provide clarity regarding the intent of existing references within multiple sections of the regulation.

The definition of “disinfection” was added to define the expectations of specific treatment components that were added to the regulation.

The definition of “groundwater condition” was added to the regulation to provide clarification of specific site conditions within the soil profile that effect various system design requirements.

The definition of “gulch – dry” was modified to provide clarification to specific site conditions during a rain event and how it relates to groundwater, and ultimately setbacks to a soil treatment area.

The definition of “limiting layer” was modified to allow for additional clarification of various conditions within the soil profile that effect various system design requirements.

The definition of “manufactured media – enhanced” was modified to clarify the classification of a specific type of manufactured distribution products.

The definition of “professional engineer” was modified to provide reference to the updated state statute, as well as to reference that the engineer must practice within their area of expertise; consistent with 4 CCR 730-1.

The definition of “restrictive layer” was added to the regulation to provide clarification of specific site conditions within the soil profile that effect various system design requirements.

The definition of “sequential distribution” was modified to remove possible confusion with serial distribution and to clarify that the significance of the design is the effluent does not pass through the distribution media before it enters any succeeding trenches and the design allows for portions of the absorption area to be isolated.

The definition of “systems maintenance provider” was added to the regulation to define the profession of individuals that oversee and maintain an OWTS, beyond just the historic term system cleaner.

The definition of “transfer of title inspector” was added to the regulation to define the profession of individuals that inspect an OWTS at the time of property transfer.

The definition of “experimental system” was deleted as it is a historic term that has not been in the regulation since 2017. New system technology proposals are addressed via 43.13.D and 43.4.I as a product development permit.

Section 43.4

The Commission expanded the conditions when an OWTS construction permit would be required to include a “change of use”, when the existing OWTS is not sized to accommodate the additional hydraulic or organic load. The prior regulation only specifically addressed “expanded use”, and local permitting agencies were having problems requiring system upgrades when a building changed how the building was used, possibly impacting the OWTS. (Section 43.4.B)

The Commission expanded the requirements for final OWTS installation approval by the design engineer. Local agencies had identified many instances where the approval letter submitted by the engineer only stated that the system was approved, and excluded any details regarding the actual installation. The additions to this section now require that the design engineer approval documentation must include any modifications from the permitted system design, general observations, and corresponding dates of all inspections. (Section 43.4.F)

The Commission expanded the system start-up requirements for pressure distribution systems. The division was informed that in many cases when a final OWTS installation inspection did not include a residual head test, the system did not function as intended once the structure was occupied. The regulation now requires that a residual head test be conducted prior to final approval of the installation so as to ensure proper system function. (Section 43.4.F)

The Commission added provisions for boards of health to license “systems maintenance providers” and “transfer of title inspectors”, and to assess appropriate fees in compliance with statutory requirements. The division was informed that local agencies were in need of additional enforcement tools to address unethical behavior or the submission of falsified information by the few bad actors that they have encountered conducting these important functions. (Section 43.4.K)

The Commission expanded the requirements for transfer of title inspections to include the notation that, to the extent possible, the inspector must identify if the OWTS is encroaching on the required setback to on onsite water supply. Further, the Commission included provisions for the local public health agency to require a water quality analysis of the water

supply in cases where the OWTS encroaches on required setbacks to the water supply for the home, or localized water quality concerns have been identified. (Section 43.4.L)

The Commission has prohibited the continued use of a cesspool on sites where a transfer of title inspection identified a cesspool as the existing means of sewage disposal. Noting that prior regulations had already prohibited both the installation of new cesspools and the repair of existing cesspools, this is a step forward to further prohibit the disposal of untreated sewage into the environment through cesspools. On sites where cesspools are identified, a conforming OWTS in compliance with Regulation 43 must be installed. If a conforming OWTS cannot be installed, the criteria for repairs established within section 43.10.I must be followed. The Commission added language within section 43.10.I to note that local boards of health may, under section 43.4.N, evaluate a site with a cesspool for a variance when the site conditions preclude installing a conforming OWTS, one of the listed repair options, or installing a septic tank. (Sections 43.4.L and 43.10.I)

Based on feedback from local permitting agencies, the Commission included clarification that local agencies can set a fee for operating permits or use permits. (Section 43.4.M)

The Commission included a note that a building or structure that includes plumbing needs a sewer connection or OWTS. This note is intended to provide a general recognition that on rural properties, an owner may construct a “building or structure” without plumbing (e.g., shop building, barn, rustic hunter “cabin” which is more like an enclosed shelter if it is without plumbing). The Commission clarified the meaning of “adequate facilities for the sanitary disposal of sewage”, noting that any failed system, or one that the local public health agency determines to be a public health or safety concern, is not adequate. (Section 43.4.O)

The Commission expanded the general prohibitions of the regulation to clarify that all new structures require either connection to a domestic wastewater treatment works or obtaining a permit from the local public health agency and installing a compliant OWTS. Further clarification was provided noting that any repair, replacement, or alteration to an OWTS required authorization or a permit from the local public health agency, and that an OWTS must only receive such biodegradable waste compatible with the biological treatment processes that occur within treatment components of an OWTS. (Section 43.4.O)

The Commission updated the provisions of the penalties section so as to match current statutory language. (Section 43.4.Q)

Section 43.5

Based on feedback from local permitting agencies, the Commission included clarification on the types of information to be compiled and submitted when applying for a local OWTS permit. (Sections 43.5.B and C)

The Commission clarified that restrictive layers and groundwater conditions must be identified during soil profile test pit excavations. (Sections 43.5.D and 43.5.I)

The Commission further expanded on the requirements to identify the “cementation class” of the soil profile when a restrictive soil layer is encountered. This will assist in the determination of the appropriate long term acceptance rate for the soil treatment area. To ensure consistent identification of this condition, a “rupture resistance” table, obtained from the USDA NRCS field book, was included in Table 5-1. (Sections 43.5.D and 43.5.I)

The Commission expanded the requirements for the evaluation of soil profile test pit excavations. In order to ensure a detailed and accurate identification of the soils on each site, while concurrently ensuring the safety of the practitioner, regulator, and general public, the Commission included provisions within the regulation indicating when soil profile test pits should be backfilled, and allowed for local public health agencies to identify inspection procedures for the evaluation of the soils within the test pits. The Commission provided an additional allowance for the local public health agency to require the installation of inspection ports to provide for an accurate evaluation of a seasonal water table. (Section 43.5.E)

The Commission clarified the expectations of how elevations must be provided on the design document for an OWTS, by clarifying the difference between the requirements of a flat site verses one with noticeable elevation changes. (Section 43.5.G)

Section 43.6

The Commission added an allowance for the local public health agency to increase the estimated wastewater flows per bedroom in cases such as a short-term rental, or similar use where additional bed spaces are provided. (Section 43.6.A)

The Commission added a section on “accessory dwelling units” to provide clarification as to the difference between this and an “auxiliary building” (i.e., non-residential). A more detailed definition of each use was provided to assist practitioners and local permitting agencies in making the correct determination. (Section 43.6.A)

The Commission further clarified what optional data could be used to determine estimated flows for a OWTS design. (Section 43.6.A)

The Commission expanded the categories within Table 6-2 (Flow estimates) to include; vacation home rentals, banquet halls, convenience stores, coffee shops, and children’s

camp, to assist local permitting agencies. The Commission clarified in Table 6-2 that discharges from non-domestic sources such as process waste, industrial waste, microbreweries, dog kennels, veterinary clinics, horse barns, etc. are not addressed in this regulation; they are regulated through the Class V Underground Injection Control program administered through the EPA.

The Commission added an additional treatment level to Table 6-3; TL3ND. This identifier references water quality meeting TL3N standards for organic matter (e.g., BOD), total suspended solids (TSS) and total nitrogen (TN), but then adds a disinfection component with a fecal coliform criteria.

Section 43.7

Feedback from local permitting agencies noted the existing setback distances were a significant burden at some sites in some counties. The Commission provided local boards of health the option to allow the local public health agency to administratively reduce the setback requirements of a soil treatment area to a property line as long as the strict provisions provided in the regulations are met. The 10' setback requirement is to ensure adequate space to construct the system and store excavated materials; there is typically no public health concern in the relationship of a soil treatment area to a property line. Subsequently, this allowance has been provided with detailed limitations. (Section 43.7.D)

The Commission provided additional detail to Table 7-1, which references the minimum horizontal setbacks between OWTS components and other physical features. These items include, an “underground” potable water cistern, agricultural irrigation lateral, irrigation channels, storm sewer, surface water, in-ground pools, and effluent pipes. The Commission clarified in a Table 7-1 footnote that any variance to a potable water supply must be provided by the Board of Examiners of Water Well Construction and Pump Installation Contractors (Division of Water Resources), and that the minimum setback allowed is 75'. The Commission expanded the methods of separation allowed between a potable water pipe and a wastewater conveyance pipe; providing equal protection to what was previously allowed (e.g., cementitious flowable fill or encasement pipe). This was included to prevent existing water conveyance pipes from being cut in order to encase the pipe; thus possibly introducing contamination into the potable water system. Lastly, in Table 7-1 footnotes, the Commission included setback criteria for ditch company easements, utility easements, multiple OWTS, and geothermal wells, based on experiences of local permitting agencies.

The Commission expanded the categories within Table 7-2 (separation distances) to include the requirements for treatment level 3ND; the new treatment level including

disinfection. The Commission further included additional terms to provide further clarification as to the intent of the regulation including, potable water wells, effluent pipes, and groundwater condition. To clarify and provide consistent application of the regulation relative to vertical separation distances in Table 10-1A and sections 43.11.C.3.d, e, and f, the Commission also inserted an additional row, 4B, in Table 7-2 for vertical separation distances for OWTS designs that include an unlined sand filter.

The Commission clarified in a Table 7-2 footnote that the Division of Water Resources does not address variances for existing wells, and that local agencies must follow the same principles when providing variances to required separation distances.

Section 43.8

Based on feedback from local permitting agencies, the Commission included clarification on component sealants, component maintenance access, and minimum size for access risers in septic tanks. Consistent with national OWTS industry safety initiatives, the Commission also included the requirement for secondary safety devices below the riser cover to prevent tank entry if the cover is unknowingly damaged or removed. This safety enhancement is for new tank risers, including replacements. (Sections 43.8.C and D)

Section 43.9

The Commission included a requirement that in order to assist in the structural integrity and longevity of tank installations, all tanks must be placed on a level uniform bedding that does not create point loading on the tank. Although commonly understood as an industry standard, feedback from local permitting agencies requested the addition. (Section 43.9.A)

The Commission clarified that proprietary treatment components do not have to meet the septic tank volume requirements identified in the regulation as long as the reduced volume is approved by the division in the technology acceptance letter. This reduced volume may be necessary for proper function of the treatment system. (Section 43.9.B)

The Commission included additional requirements on all tanks that are installed below vehicular traffic areas, requiring that they meet appropriate AASHTO H-20 or HS-20 standards to support vehicle loading. (Section 43.9.B)

The Commission included additional requirements for sewer and effluent pipes installed below vehicular traffic areas and at the inlet and outlet of all tanks. These additional requirements were added to improve the structural integrity of piping installed in these areas. (Section 43.9.D)

The Commission further clarified the requirements for sewer pipe cleanouts between the home and a septic tank. This allows for flexibility in the location of the cleanout when locating it directly outside the foundation is not feasible or practical. (Section 43.9.E)

The Commission expanded the requirements for systems that include a grinder pump that is installed prior to a septic tank. Since the use of a grinder pump causes finer particles, and more dispersion within the septic tank, additional requirements were necessary. The expanded requirements now necessitate that the effluent pipe from the grinder pump be connected to the sewer line prior to entering the septic tank, that the total tank volume must include an additional 500 gallons of septic tank capacity, and that the septic tank must now include an effluent filter. These additional requirements included in the regulation are to reduce the amount of solids entering soil treatment area. (Section 43.9.I)

The Commission expanded the requirements for the installation of an electrical control panel when the OWTS requires a pump. In order to provide access during winter months, the bottom of the control panel must be at least 30” above grade. (Section 43.9.I)

The Commission clarified the requirements for effluent filters to ensure that they meet the appropriate ANSI/NSF standards. (Section 43.9.J)

Section 43.10

To provide clarity to local permitting agencies, the Commission included additional soil types, soil conditions, and treatment levels within the regulation, and the Commission expanded on the conditions that required a professional engineer to design the OWTS. (Section 43.10.B)

Based on feedback from local permitting agencies relative to OWTS issues observed in slowly permeable soils, the Commission placed additional requirements on soil types 4A and 5. OWTS in these soils will be required to include pressure distribution of the effluent and provide at least two alternating zones. This will ensure equal distribution throughout the soil treatment area and provide additional time for the effluent to infiltrate into the soil. (Footnote to Table 10-1)

Based on feedback from stakeholders about OWTS issues in rocky soils, the Commission provided significant edits to Table 10-1A (Design criteria for soils with high rock content). These edits include the following:

- The addition of soil types “fractured bedrock” (FBR), and “deteriorated bedrock” (DBR). Practitioners and regulatory agencies alike noted that the identification of the various types of bedrock were being included in soil type R-0, which was originally intended to include sites with a very fast percolation rate. However, this is not

always the case when FBR or DBR conditions are encountered. Thus, the new categories are now included in the table to more accurately describe these site conditions.

- The descriptive parameters of the various type R soils (i.e., soil matrix type, percent of rock, and size of rock) were further clarified to assist in the proper identification of each soil type.
- As the level of deterioration in weathered bedrock can vary significantly, an “excavation difficulty” column was added to this table. More dense (harder) bedrock will provide substantially slower permeability compared to less dense formations. To provide consistent identification of excavation difficulty, Table 10-1C was added to the regulation. This table was obtained from the U.S. Department of Agriculture’s (USDA) National Resource Conservation Service (NRCS) field book and describes five levels of excavation difficulty that can be easily understood by those evaluating the soil profile. Modifications to long term acceptance rates relative to the level of excavation difficulty were also provided.
- Soil permeability rates were added to each soil type to provide guidance as to the intent of each soil identifier.
- A column for the new treatment level, TL3ND, was inserted into the table. Due to the high level of treatment provided, the depth of the imported treatment sand required for TL3ND effluent was reduced.
- Additional guidance relative to the modifications to this table were provided within an expanded footnote section.
- To assist in the consistent identification of site conditions where fractured bedrock (FBR) exists, Table 10-1B was added to the regulation. This table was obtained from the USDA NRCS field book and identifies five categories, each identifying various spacing of fractures within the bedrock. The table then provides a suggested long term acceptance rate for each category. The intent of Tables 10-1B and 10-1C is to assist in consistent classification of the rock/soil conditions at a site and subsequently provide the appropriate long term acceptance rate.

The Commission modified the requirements of Table 10-3 (Size Adjustment Factors for Types of Distribution Media in Soil Treatment Areas for Receiving Treatment Level 1 Effluent) to create separate allowances for soil types 4A and 5. As previously noted, these soil types have extremely slow permeability, thus further reducing the required size of the soil treatment area was not appropriate.

The Commission clarified the allowances for specific OWTS design criteria in instances where the soil treatment area must be installed below paved surface or where vehicular traffic occurs. As these conditions provide for reduced oxygen levels to the soil treatment area, minimum treatment levels and a restriction on size adjustment factors are now included. (Section 43.10.E)

The Commission further clarified how effluent in a gravity flow distribution system must be connected to the distribution header of the system. This item was included to assist in the equal distribution of effluent. (Section 43.10.E.2.g)

Based on feedback from local permitting agencies, the Commission modified and expanded the requirements to clarify the design of pressure distribution dispersal systems. Modifications to this section included specifying operating head (i.e., squirt height) requirements relative to orifice size and elevation of the distribution pipe. Expanded requirements include allowances for an alternative location of where the forcemain in a pressure system can be connected to the distribution manifold, and that the effluent must be screened prior to final dispersal. This is intended to assist in the equal distribution of the effluent. Additional expanded requirements (also noted in section 43.4) includes the inspection of a residual pressure head test on the distribution system prior to regulatory approval of the system. This is to ensure the proper function the system prior to occupancy of the structure. (Section 43.10.E)

The Commission removed the allowance to install a “serial distribution” system. This type of system is where the effluent must always travel through the initial trench in a soil treatment area before it can access the next trench. This type of system does not allow for system management, where one trench could be taken out of service and rested. Alternative installations such as a sequential distribution system, which in essence covers the same footprint, are still allowed. (Section 43.10.F)

The Commission provided clarity on the location of pipe perforations for inspection ports within the soil treatment areas. (Section 43.10.F)

The Commission clarified the requirements for the installation of chamber distribution systems. In order to provide for maximum usage of the soil treatment area a clarification was provided relative to the elevation that the effluent pipe from the septic tank could be connected to the chamber. Additional clarification was provided noting that the area beneath the endcaps to each chamber row must not be included in the soil treatment area calculations. This area is addressed through the allowance of the chambers only needing to cover 90 percent of the excavated area, and still receiving full credit for the square footage of the excavation. (Section 43.10.G)

The Commission clarified that the size adjustment factors in Tables 10-2 and 10-3 may not be used where drip dispersal systems are installed. As drip systems are a specific type of distribution, the manufacturers provide specific sizing requirements dependent on the soil type where the system is installed. Reductions to these sizing requirements are not appropriate. (Section 43.10.G)

The Commission modified the requirements for when imported treatment sand is installed in an excavation where a soil type 1 – 5 is the underlying soil. In order to assist in the effluent moving into the existing soil below the fill, the long term acceptance rate must be relative to the most restrictive soil within 12” below the sand base. (Section 43.10.H)

The Commission provided requirements for the installation of a soil treatment area where the site had been previously filled with soil materials. This section identifies procedures to ensure that the effluent will be properly treated and will be able to infiltrate into the in-situ soil layer below the fill material. (Section 43.10.H)

The Commission modified the requirements for the allowance of deep gravel trenches for repairs of OWTS. Due to the likelihood of smearing and compaction of the sidewalls of the excavation in soils with a high content of silt and clay, deep gravel trenches may not be installed in soil types 3A, 4, 4A, and 5. The Commission also clarified both the maximum depth of the trench and that all vertical separation requirements provided in Table 7-2 must be met. (Section 43.10.I)

The Commission clarified that as seepage pits concentrate the effluent in a smaller area verses a soil treatment area, sizing requirements for the use of higher level treatment systems with seepage pits are not allowed. (Section 43.10.I)

Section 43.11

The Commission moved items referencing pressure distribution design criteria from this section into section 10, which now includes all requirements for pressure distribution design in one location. (From Section 43.11.B to 43.10.E)

The Commission removed unlined sand filters from needing an oversight program when higher level treatment application rates are used. Since unlined sand filters are required for sites with high rock content to address inadequate treatment soil, even in counties without an oversight program, it is not appropriate for the regulation to mandate an oversight program where local agencies do not have the resources to conduct such a program. Specific application rates for these systems are provided within section 43.11.C.3 and 43.11.D. Subsequently, unlined sand filters were removed from section 43.11.C.1 as a stand-alone system that provides higher level treatment. (Sections 43.11.A and 43.11.C).

Based on feedback from local permitting agencies, the Commission removed the category of “preferred sand” and changed the identifier of “secondary” sand media. There is now only one specification; “imported treatment sand”. This identifies the specification of the quality of sand that must be met when sand is imported and used to treat the wastewater. Preferred sand, although ideal for OWTS, has a very limited availability in Colorado. In many instances, regulators were receiving designs specifying this material, only to find that it was not available and the design needed to be revised to include secondary sand; which requires a larger soil treatment area. Due to the limited availability of preferred sand, and to prevent further uncertainty with design submissions to local permitting agencies, the Commission determined that the specification for secondary sand will be used for the new requirement of “imported treatment sand”. (Section 43.11.C)

The Commission modified the requirements for the submission of a gradation for imported treatment sand. The previous regulation identified two different specifications for treatment sand, preferred and secondary. Gradations, no more than one month old, were required to ensure that the material specified was actually used for the installation. Noting that there is now only one specification for imported treatment sand, and after over seven years of gradation submissions, the industry has an understanding of where certain materials are available, and is aware of how gradations are obtained, the Commission is extending the allowance for the gradation to be no more than four months old. Further, the gradation must be provided on letterhead from either the source gravel pit, or independent materials testing laboratory. (Section 43.11.C)

The Commission has defined one single standard for the application of effluent to the distribution media in an unlined sand filter when TL1 effluent is dispersed. Previously two application rates were specified depending on the type of sand that was imported. Now that the Commission has defined only one criteria for the imported treatment sand, a standard application rate of 0.8 gal./sq.ft./day is now used. (Section 43.11.C)

Similarly, the Commission further defined the application of effluent to the distribution media in an unlined sand filter when TL2 – TL3ND effluent is dispersed. The updated criteria provides for soil type 1 application rates, relative to the level of treatment the effluent receives prior to dispersal. (Section 43.11.C)

The Commission clarified the allowable long term application rates for in-situ soils below unlined sand filters. When 24” of imported sand is provided, the dispersed effluent is ultimately treated to TL3 standards. Subsequently, the long term acceptance rate for the most restrictive soil within 12” below the sand base is used. This ensures that the effluent is applied at the appropriate rate and that the soil will accept the effluent. (Section 43.11.C)

The Commission clarified vertical separation requirements for the various treatment levels that the effluent receives. Effluent receiving higher levels of treatment are provided a less restrictive vertical separation. These sections also include vertical separation requirements for soil types DBR and R-1, which directly relate to the treatment level that the effluent receives prior to dispersal. (Section 43.11.C)

The Commission has identified a required setback between the base of adjacent sand filter systems. As these regulations now possibly require that the distribution system and the base of the sand filter be of varied sizing, depending on soil type, a six-foot separation requirement now applies to ensure that one system is not overloaded. This six-foot separation is consistent with other sections of this regulation. (Section 43.11.C)

The Commission clarified that the base of both a lined sand filter and a lined recirculation sand filter must be at least two feet above an actual or seasonal high water table. (Section 43.11.C)

The Commission provided significant edits to the section on “mound system” design criteria in Section 43.11.D. These edits include the following:

- Clarification was provided to identify the various types of mound systems that may be installed. The types are based on the elevation of both the imported treatment sand and the distribution system, relative to existing grade.
- Imported sand fill loading rates for mound systems with a minimum of 24” of imported treatment sand were modified to be consistent with the rates previously identified in this section for unlined sand filters, relative to the treatment level of the effluent that the system receives. Mound systems where at least 24” of imported sand is installed are in essence unlined sand filters, thus the consistent application between these sections is appropriate.
- Imported sand fill loading rates for mound systems with less than 24” of imported treatment sand were modified. When TL1 effluent is received, the long term acceptance rate for the most restrictive soil within 36” below the upper infiltrative surface is used. When TL2 – TL3ND effluent is received, the long term acceptance rate for the most restrictive soil within 36” below the upper infiltrative surface is used; relative to the treatment level of the effluent received. Each ensuring that the effluent is applied at the appropriate rate and that the soil will accept the effluent.
- Underlying soil loading rates for mound systems that provide a minimum of 24” of imported treatment sand was modified to use the TL3 LTAR of the most restrictive in-situ soil layer within 12” of the imported sand base. Ensuring that the effluent is applied at the appropriate rate and that the soil will accept the effluent.

- Underlying soil loading rates for mound systems that provide less than 24” of imported sand were modified. When TL1 effluent is received, the long term acceptance rate for the most restrictive soil within 36” below the upper infiltrative surface is used. When TL2 – TL3ND effluent is received and the local public health agency implements a program for required system maintenance (43.14.D), the long term acceptance rate for the most restrictive soil within 12” of the base of the imported sand is used; relative to the treatment level of the effluent received. If the local public health agency does not implement a program for required system maintenance, then the TL1 LTAR for the most restrictive in-situ soil layer within 36” of the top of sand is used. Each ensuring that the effluent is applied at the appropriate rate and that the soil will accept the effluent.
- Linear loading rates for mound systems were further clarified to provide the necessary requirements for systems with a soil permeability less than 60 min./inch, and those greater than 60 min./inch. Sites with a slower soil permeability require longer and narrower mounds, while the length to width ratio for soils with acceptable permeability is not as critical.

Section 43.12

Based on feedback from local permitting agencies, the Commission modified the requirements for non-pressurized drip dispersal systems (NDDS). As this type of system requires increased oversight to assist in the intended function and longevity of the system, new installations will only be allowed in counties where the local public health agency implements a program for system oversight and maintenance (43.14.D). Additionally, the revised publication, *Colorado Professionals in Onsite Wastewater Guidelines for the Design and Installation of Non-Pressurized Drip Dispersal Systems (NDDS), Revision: October, 2024* was adopted as a procedural document that must be complied with. This is an update to the 2016 document that was previously referenced in this regulation. (Section 43.12.A)

The Commission expanded the requirements for wicking sand that is used in an evapotranspiration system. As this is a very specific sand that is seldom used in the installation of onsite wastewater treatment systems, a requirement has been added to the regulation requiring a gradation of the wicking sand media that is proposed for the actual installation. This gradation must not be dated more than one month prior to the installation. (Section 43.12.A)

The Commission modified the requirements for the prohibitions and allowed uses for vaults (other than vault privies). Since vaults must be pumped to empty them, vaults may not be installed in cases where access for pumping and general system maintenance

cannot be provided. An allowance was also added for the use of a vault for private recreational vehicle dump station. Additional requirements for structural integrity and watertightness of the vault were provided. (Section 43.12.C)

The Commission provided additional requirements for structural integrity and watertightness for vault privies. This provides consistency with the design criteria for septic tanks and vaults (other than vault privies). (Section 43.12.D)

Based on feedback from local permitting agencies, the Commission allowed a local board of health to permit reductions in the estimated flows to the OWTS when composting or incinerating toilets are the only such fixtures in the structure; i.e.: no flush toilets. The size of the soil treatment area may be reduced by 25% when specific criteria provided in the regulation is followed. This provision may only be applied in jurisdictions where the local public health agency implements both a transfer of title and use permit program. Such programs require periodic inspections of the fixtures within the structure to ensure compliance with the regulation. (Section 43.12.E)

The Commission expanded the requirements for the use of incinerating toilets to ensure compliance with applicable federal, state, and local building, plumbing, and air-pollution requirements, and manufacturer's instructions. (Section 43.12.E)

Subsequent to the creation of treatment level 3ND, the Commission developed minimum standards for disinfection components that are integrated into the treatment train of an OWTS, to ensure that the component meets minimum standards. All disinfection systems must comply with specific NSF/ANSI standards (or equivalent), and maintain water quality below specific maximum fecal coliform levels. Further, disinfection systems are only allowed when the effluent is treated to TL3N quality prior to treatment within the disinfection system. This assists in the ability of the disinfection system to meet the noted requirements. Additional provisions for the use of chlorine disinfection were granted, identifying minimum free chlorine levels that must be maintained. (Section 43.12.F)

Section 43.13

The Commission expanded the requirements for manufacturers of proprietary treatment products. As operation and maintenance is critical to ensuring that the treatment system maintains the quality of effluent that it was approved for, the manufacturer must now identify the provisions that they have developed for the training of installers and service providers specific to their product line. (Section 43.13.D)

The Commission removed the allowance within the previous regulation that provided a transitioned acceptance process for proprietary treatment products that had been approved by the division reviewed technologies accepted before 2013 upon request and

issued new acceptance letters after 2013. After a period of more than 10 years, the Commission removed the transition review process and all proprietary treatment product requests will now be reviewed consistent with the current Section 43.13. Only treatment products with a CDPHE acceptance letter dated after June 30, 2013 are accepted for use in Colorado. (Section 43.13.D)

The Commission expanded the requirements for chamber distribution products. All approved chambers must now meet appropriate IAPMO standards of design and construction. Note that all currently accepted chambers products meet the IAPMO standard. (Section 43.13.E)

The Commission modified the requirements for enhanced manufactured media in order to more accurately identify how specific product lines currently in the market can meet the minimum standards and expectations of the regulation. (Section 43.13.E)

Section 43.14

The Commission expanded the types of systems that require inclusion in the local public health agencies oversight program for inspections, maintenance, recordkeeping and enforcement (section 43.14.D). Disinfection systems and NDDS systems were added to the current oversight program requirements for all higher level treatment systems, as operation and maintenance is critical to ensuring that these systems also maintain the quality of effluent expected.

The Commission clarified the standards for the analysis of water and wastewater sampling, ensuring that it complies with the American Public Health Association, American Water Works Association, and Water Environment Federation: Standards Methods for the Examination of Water and Wastewater. (Section 43.14.E)

The Commission expanded the allowances for local public health agencies to require water quality monitoring to include TL3ND systems, remediation systems, and systems that fall under local agency use permit programs. (Section 43.14.E)