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March 23, 2018

TO: Gunnison County Environmental Health Board

FROM: Crystal Lambert, Building & Environmental Health Official

SUBJECT: *Draft* Gunnison County OWTS Regulations

A. PURPOSE:

The State of Colorado, Water Quality Control Division, revised Regulation 43-OWTS Regulation last year (effective June 30, 2017). All local jurisdictions, including Gunnison County, have been given until June 30, 2018 to adopt revised OWTS Regulations that are no less stringent then Regulation 43.

B. BACKGROUND:

The current OWTS Regulations, at State and local levels, were promulgated by the introduction of the OWTS Act, 25-10-101, C.R.S., in 2012. Regulation 43, the State of Colorado's OWTS Regulations, were first adopted in accordance with the OWTS Act on June 30, 2013. All local jurisdictions within the State of Colorado were given until June 30, 2014 to adopt OWTS Regulations no less stringent then Regulation 43. On June 30, 2017, the State revised Regulation 43 for the first time since adoption in 2013.

C. POSSIBLE ACTIONS BY THE GUNNISON COUNTY ENVIRONMENTAL HEALTH (EH) BOARD

a) The EH Board may decide to provide a recommendation to the Gunnison County Board of Commissioners for the draft *Gunnison County OWTS Regulations*.

b) The EH Board may decide to provide a recommendation to the Gunnison County Board of Commissioners for the draft *Gunnison County OWTS Regulations*, with revisions, omissions, or additions.

c) The EH Board may decide that additional information and/or discussions are needed and may continue the Public Hearing.

D. STAFF RECOMMENDATION

The attached draft OWTS Regulations have been prepared following the revisions to Regulations 43, recommendations from the EH Board and the State Water Quality Control Division, and additional staff review.

<u>Changes made at the recommendation of the EH Board from the 2-22-18 work session:</u>

On February 22, 2018, the Environmental Health Board held a work session to discuss first draft of the revisions to the Gunnison County OWTS Regulations. From that meeting the following changes were made or added to the draft document:

1. Section 4.A.2.b. requires that all licensed systems cleaners, and vacuum truck technicians employed by the license holder, submit documentation of completion of the NAWT Vacuum Truck course or NAWT O&M 1 course.
2. Section 4.A.5.g. requires that a licensed systems installer maintain certification as a certified installer through the NAWT or certification from an approved equivalent.
3. Section 4.A.6.d. requires that an OWTS Cleaner keep records for a period of seven years.
4. Section 4.A.6.e. requires that an OWTS Cleaner, and vacuum truck technicians employed by the license holder, maintain certification as a certified NAWT Vacuum Truck Operator or certified NAWT Operation and Maintenance 1 provider.
5. Section 4.A.7.a.(2) requires that all systems installed by a property owner, not a licensed Installer, be designed by a professional engineer.
6. Section 4.A.7.a.(4) requires an additional inspection after excavation and preparation of the soil treatment area and prior to placement of any soil treatment area components, for system not installed by a licensed Installer.

State Review: Comments and Changes:

An initial review of the draft document was provided by the State Water Quality Control Division. From that review the following minor changes were made:

1. Table 10-1: The term “massive” was aligned with the term “structureless”.
2. The required second sentence was added to Section 17.D.1.
3. Item (4) in Section 9.I.7.a. was added.

Additionally, the State provided a comment for consideration concerning Table 7-2:

> “It was noted that you increased the vertical and horizontal separation requirements within this table; which is acceptable. However, as you noted in your “Decision Point Summary”, Gunnison County will allow for reductions with the use of higher level treatment systems, and thus will maintain an oversight program to ensure that the required system maintenance is conducted. If you choose to maintain your proposed separation distances as noted in Table 7-2, then the only reduction that would be allowed would be for the size of the soil treatment area. While this is your decision (as your proposals are more stringent than Regulation 43), <u>it is recommended that at some level of treatment (e.g., possibly TL3N) a reduction in separation distances be allowed. The application of your proposed regulation may actually deter someone from installing a higher level treatment system which they may have otherwise installed</u>. Note that sub-sections within 11.C.3 of your regulation also make reference to the vertical separation requirements.”

<u>Changes from additional staff review since the 2-22-18 work session (does not include minor formatting changes)</u>

Section 1.I.: *General Policies of the Gunnison County, Colorado Board of County Commissioners* has been added and taken from the current *OWTS Regulations*.
Section 3.A.5: *Application Term* was added.
Section 3.A.6. *Permit Term* was modified to be less stringent.
Regulation of OWTS Installers and OWTS Cleaners was given its own Section (Section 4).

Enforcement was given its owner Section (Section 15).
OWTS Special Districts was given its own Section (Section 16).
The Transfer of Title Section was moved to Appendix C.

<u>The original list of the changes presented in the draft document and discussed at the 2-22-18 work session meeting with the Environmental Health Board:</u>
The following items are optional in Regulation 43 and have been added to the proposed draft:

<u>Section 4.A.1.b.</u> requires that OWTS installers take and pass the NAWT Installers Course within two years of the effective date of the Regulations.

> Staff recommends that this section be added to increase the quality of work for system installations. This would also decrease the amount of time that staff spends with installers in the field on correction items and would reduce the number of re-inspections. This would require that all installers, even the ones currently licensed, take and past the course within two years.

<u>Section 4.A.5. & 6.</u> sets standards of performance for OWTS Installers and Cleaners.

> Staff recommends this sections be added to establish agreed upon levels of performance for licensed OWTS contractors. This would become part of the annual signed agreement for renewing licenses and would also become a basis of license revocation, if needed.

<u>Section 4.A.7.</u> addresses property owner installations. Gunnison County currently has no requirements for home-owner installations. The unofficial protocol has been to give the property owner a system specific short test and talk to them about the challenges they might face. What this protocol has led to is countless re-inspections of failed final system inspections, frustration and an excessive amount of cost to the property owner for re-doing system installations or re-purchasing components.

Appendix C: *Transfer of Title Inspections*
This program would ensure that systems are functioning as designed, identify failed systems, and promote awareness of septic health and care. Additionally, some of the OWTS in Gunnison County are very old stock (metal barrels with holes drilled in them) and this program would begin to identify and replace those failed systems.

The following items are provided by the State as the changes to Regulation 43.

New definitions for the following terms were added to assist in the clarification of regulatory requirements: accessible, bedroom, deficiency, record drawing, and repair. The following definitions were also added to provide clarification on system design and separation requirements: basal area, cistern, cut-bank, holding tank, linear loading rate, enhanced manufactured media.

The definition of “competent technician” was revised to more accurately define this term per the actual requirements of the regulation.

The definition of “domestic wastewater treatment works” was corrected to match the Colorado Water Quality Control Act.

The definition of “effective size” was revised to provide an accurate definition of this item.

The definition of “failure” was revised to further clarify what the stakeholders decided actually constitutes the failure of an OWTS and to assist in system evaluation under the Transfer of Title program.

The definition of “infiltrative surface” was revised to further clarify the distinct soil interfaces that would be considered an infiltrative surface.

A definition of “limiting layer” was developed to provide clarity and to address perceived conflicts between the separate definitions of limiting condition and restrictive layer, which were both removed. This new term will serve as the standard term for several site conditions that require specific OWTS design considerations. This term was applied at various locations within the regulation as appropriate.

The definition of “liner” was revised to clarify the minimum thickness requirement of the liner material.

The definition of “malfunction” was revised to further define a condition that required attention, but would not necessarily be defined as a failure.

The definition of “manufactured media” was revised to clarify the difference between this component and the newly created category for “enhanced manufactured media”.

The definition of “mound” was revised to address the perceived conflict between the definition of a mound and the requirements for a mound in the design criteria within the regulation. *Staff comment: The State has recently put out an excellent guidance document on the design of mound systems.*

The definitions of “pressure distribution” and “dosing, pressure” were revised to further state the requirements of a distribution system in order to be considered a pressure dosed system.

The definitions of “sand filter, lined sand filter, and unlined sand filter” were revised to provide consistency and clarity across these three items.

The definition of “soil profile hole” was removed from the regulation as it is no longer used. Soil evaluations are now conducted by a visual and tactile evaluation of a soil profile test pit excavation.

The definition of “suitable soil” was revised to more concisely define the intent of the regulation, and to include new concepts and terms used in this revision.

The definition of “wastewater, high strength” was revised to further clarify the requirements and to accurately equate to Table 6-3 found later in the regulation.

An abbreviation for Non-pressurized Drip Dispersal System was added to Table 3-1.

Section 43.4

The Commission modified 43.4.A.1, *Section 1.G*., from a reference to “equal to or greater than 2000 gpd” to “greater than”, to match the Colorado Water Quality Control Act.

The Commission revised the section on “Product Development Permits”, and removed the “Experimental Systems” section. The verbiage from the “Experimental Systems” section was

modified and relocated to the “Product Development Permit” section; 43.4.I, *Section 3.K.*, to be consistent with the OWTS Act. The Commission also further defined how a product can “qualify” for testing under a product development permit, and that local agencies are to supply the Division with a copy of the completed product development permit. *Staff comment: This change is required. As a result, the New Technology Section of our current Regulations has been deleted and replaced with Product Development Permits.*

The Commission modified section 43.4.L, *Appendix C*,; Transfer of Title Inspections. These modifications included extending the time that an inspection report was valid and redefining what items noted in the report were required to be repaired or replaced prior to issuance of an acceptance document, while others items were only required to be identified to the owner. The Commission also removed the set time frame required to complete repairs per an acceptance waiver, now allowing the local public health agency to define the length of time allowed by the waiver. *Staff comment: This is an optional choice for all local agencies. The State has made this section less stringent then the first Regulation 43 document. In 2014, when we first reviewed this Section it was too strict for us to be able to enforce without significant additional staff time required. The revision to, and easing up, of this section makes it possible utilizing our current staff. Currently, staff spends a considerable amount of time assisting new property owners to figure out their existing system, where it is, what it is made of, why its failing, etc. Building inspections are common in real estate transactions, and OWTS needs to become a part of the program as well.*

The Commission renamed section 43.4.M from “Renewable Permits” to “Permits for the Continued Use of an OWTS”. The intent was to provide consistency where permits were issued for operation and maintenance of existing systems and for the acceptance of an OWTS at the time of Transfer of Title.

The Commission modified section 43.4.N.5.d to rescind the requirement that a variance to an off-site feature must not be granted without written consent of the owner of the property containing said feature. The Commission decided that this section could cause a taking of property without evidence of an environmental or public health concern. A clause was added to ensure that the adjacent property owner of the feature in question was notified of the time and date of the hearing.

The Commission modified section 43.4.N.5.g to further clarify that variances for system sizing or separation reductions were not allowed with the use of higher level treatment systems unless the LPHA had implemented a system maintenance and oversight program. *Staff Comment: We have adopted a system maintenance and oversight program for higher level treatment systems. This is included in the draft (Section 14.D).*

The Commission modified section 43.4.O.2 to also prohibit the repair of an existing cesspool; requiring the installation of a conforming OWTS. Previously, only new installations were prohibited.

The Commission decided to not provide additional requirements for the disposal of septage within section 43.4.O.5. The Commission recommends compliance with EPA 40 CFR, Part 503 Biosolids Rule as additional guidance regarding provisions and requirements for land application, surface disposal, pathogen destruction, vector attraction reduction and incineration of biosolids.

The Commission modified items within 43.4.P; Cease and Desist Orders, from allowing “a reasonable period of time” to bring the system into compliance, to “30 days”, to accurately comply with the requirements of the Colorado On-site Wastewater Treatment System Act.

The Commission modified items within 43.4.Q.1 to reference the correct statute regarding a Class 1 petty offense.

The Commission inserted sections from the OWTS Act, 25-10-113 (2) and (3), C.R.S., into 43.4.Q.2 and 3 to clarify the allowance for penalties based on comments received from local public health agencies.

Section 43.5 (Section 5)

The Commission modified items within 43.5.B and C to further clarify what is required as part of a “Preliminary Investigation” and a “Reconnaissance Visit” prior to the design of an OWTS.

The Commission modified items within 43.5.D.1 to match the delayed implementation language of the original Regulation 43. Specifically, that following three years after the original effective date of Regulation 43 (June 30, 2013), a soil profile test pit excavation must be conducted during a site evaluation. The Commission also required a minimum of two soil profile test pit excavations to determine soil type and identify if any limiting layers exist. A percolation test still may be conducted in addition to the excavation in order to obtain additional information. *Staff comment: Key thing to note here is that systems can no longer be sized off of a percolation test alone. They can still be done but only to provide additional information.*

The Commission included a requirement indicating that the minimum depth of a soil profile test pit excavation must be to a limiting layer, or at least four feet below the infiltrative surface of the proposed soil treatment area.

The Commission included a specific reference to the evaluation of soil consistence and other similar conditions that may interfere with treatment and dispersal of effluent.

The Commission clarified the “Procedures for performing percolations tests”, in order to coincide with proper methodology for soil percolation testing.

The Commission modified items within 43.5.E.1; “Marking of Soil Profile Test Pit Excavations or Percolation Holes”, to require that excavations shall be suitably barricaded to prevent unauthorized access.

The Commission modified section 43.5.F.1.g indicating that site plan drawings are to include a fixed non-degradable temporary or permanent benchmark to ensure a more accurate OWTS installation, consistent with the approved design plans.

The Commission modified section 43.5.G.3 indicating that a design document for all dosing systems must now include calculations for total dynamic head and gallons per minute. Scaled drawings must now include separation distances to water supplies and surface water on both the subject and adjacent properties. Elevations or relative depth for the infiltrative surface, septic tank invert, and all other OWTS components must be provided.

The Commission removed the specific reference to septic tanks in former section 43.5.G.3.e regarding specifications for loads for burial depth and ground water, noting that per 43.13 the

division must review and accept septic tanks from a manufacturer prior to the allowance of the installation of the tank.

The commission included the requirement that the proposed site for the soil treatment area be protected not only during OWTS construction, but also prior to OWTS construction so as to prevent soil compaction from other site activities.

The Commission modified items within 43.5.J.2.b to allow for a testing requirement within the soils training for a competent technician, if the training or workshop includes an exam.

Section 43.6 *(Section 6)*

The Commission modified section 43.6.A.2 to only allow for a local public health agency to increase the design flow per person from 75 gpd to 100 gpd, "on a case-by-case basis". This will increase statewide consistency but retain local flexibility where justified. *Staff comment: We already did this.*

The Commission modified section 43.6.A.4 to allow for composite sampling when testing wastewater from multi-family or commercial systems.

The Commission included the allowance in section 43.6.A.5.e for the installation of a timed dosed NDDS where flow equalization is utilized.

The Commission made the following modifications to Table 6-2: separated out flows by fixture type to clarify that calculating flows using fixture values is strictly for auxiliary buildings; inserted estimated flows from a "tiny home" (<400 sq. ft.); increased the estimated flows for travel trailer parks with individual sewer and water connections to 100 gpd (this is in compliance with NFPA 1194, Section 7.8.2); provided additional direction for OWTS sizing for a church and group home. *Staff comment: This change allows tiny homes to design an OWTS for only one bedroom, instead of the required 2 bedrooms for bigger dwellings.*

The Commission made the following modifications to Table 6-3: indicated that septic tank effluent will be measured in BOD_5 and higher level treatment effluent will be measured in $cBOD_5$ so as to adhere to industry standards. Also, the constant of multiplying BOD_5 by 0.85 to obtain $cBOD_5$ was removed since there is not a set ratio for these constituents.

The Commission created Table 6-4 to assist in further clarifying the existing definition of "Wastewater, High Strength".

Section 43.7 (Section 7)

The Commission made the following modifications to Table 7-1: created separate isolation requirements for structures with and without basements, crawl spaces or footing drains to an OWTS; revised the separation requirements from a cistern to an OWTS to comply with the Water Well Contractors rules; added separation requirements from upslope curtain drains to an OWTS; added irrigation wells and monitoring wells set in a potable aquifer under well setbacks; added an allowance for other methods of encasement for crossings and encroachments; and referenced the Colorado Plumbing Code regarding the separation requirements to a building sewer. *Staff comment: About Table 7-1 in general, the draft table is presented using Gunnison County's historic setback distances, which are greater than the State's distance requirements for certain physical features (water bodies). This difference has a ripple effect for customers*

seeking a variance to reduce that separation distance. Under the State's Regulations, people seek a variance for distances less than 50 feet to a water body, in Gunnison County someone has to go through that same variance process for reducing the distance to less than 100 feet. Staff is recommending a discussion about these distances.

The Commission made the following modifications to Table 7-2: expanded the vertical separation requirements above a limiting layer for TL2N and TL3 effluent to two and one-half feet to recognize that these treatment levels do not provide the same treatment as TL3N; further clarified that a horizontal separation reduction to 75 feet is allowed for TL3N effluent only after a variance is obtained from the Water Well Contractors Rules; and noted that the minimum vertical separation from the bottom of a seepage pit to a limiting layer is four feet. *Staff comment: We opted not to include any vertical reduction in our current Regulations. The technology has been proven and these systems would forever be under an operation and maintenance program. Staff is recommending a discussion about this Table for use in Gunnison County.*

Section 43.8 *(Section 8)*

The Commission inserted a requirement within 43.8.D indicating that the maximum depth to the top of a new septic tank, new dosing tank or new vault shall be four feet and further clarified the requirements for riser lids. These requirements will allow for proper maintenance of each component.

The Commission further explained that the "sufficient weight" of a riser lid is defined as 59 pounds. This aligns with industry standards.

The Commission expanded the requirements within 43.8.G by requiring both an audio and visual alarm signal to ensure that the user will be notified if an electrical component is not functioning properly.

Section 43.9 *(Section 9)*

The Commission modified section 43.9.A.1 to require a watertight seal between the final and the previous compartment of a tank if the last compartment is used as a pump or siphon chamber.

The Commission modified sections within 43.9 to reference the most current national standards for septic tank construction.

The Commission modified section 43.9.B.4 to ensure that the design of septic tanks, baffles, tees and access openings follow accepted industry standards.

The Commission inserted requirements for cleanouts in sewer lines so as to allow for proper access for maintenance.

The Commission inserted a section that requires a siphon-dosed system for pressure dosing and higher level treatment systems to be able to track the number of doses to the soil treatment area.

The Commission further clarified section 43.9.I.3 which references the design requirements for multiple compartment tanks that use the final compartment for the installation of a pump or dosing siphon.

The Commission inserted a section that provides for a smaller diameter riser over a pump chamber, but only when the riser is an integral component of a specific product that is accepted by the Division.

The Commission inserted a section that requires all intrusions on a pump chamber riser to be watertight.

The Commission modified the section on “Controls” to align with applicable codes and industry standards. This section now requires the following: To comply with applicable electrical codes, an electrical disconnect must be provided within line of sight of the pump chamber. To assist in operation and maintenance, a means of tracking both the pump run time and number of cycles for pressure dosing and higher level treatment systems is now required. All panels or boxes must bear the seal of a Nationally Recognized Testing Laboratory (NRTL), such as UL or ETL was expanded from only allowing UL listed.

The Commission modified section 43.9.J by defining what type of effluent screening is acceptable when effluent is dosed from the final compartment of a septic tank, and inserted a section that requires an effluent screen to be placed on the outlet from the septic tank when an ejector pump, grinder pump or non-clog pump is used prior to the septic tank.

The Commission inserted a section that requires the handle of an effluent screen to extend to within 12 inches of grade to allow for ease of maintenance.

The commission expanded the section relating to the size and design of “grease interceptor tanks” and their internal components to bring the regulations more into alignment with accepted industry standards.

Section 43.10 *(Section 10)*

The Commission inserted a section that allows for the application of higher level treated effluent by gravity distribution in soil types 3, 3A, 4, 4A, and 5 for designs where reductions in soil treatment area size or vertical/horizontal separation are not applied.

The Commission modified Table 10-1 to allow for increased long-term application rates (10%+/-) in cases where higher level treated effluent is applied to a soil type 1, 2, 3, or 3A. These increases are within accepted industry parameters for the application of treated effluent. This was completed to modify parts of the current regulation whereby certain designs using the sizing adjustment factors provided in Tables 10-2 and 10-3 would be smaller in size than a design applying higher level treated effluent to the same site. With this modification, the commission removed section 43.10.D.3, which only allowed for a fifty percent size reduction to the baseline system when the size adjustments for Tables 10-2 and 10-3 were applied. The Commission also modified the identifiers for soil structure so as to accurately concur with the USDA soils manual.

The Commission removed soil type “0” from Table 10-1 and placed it within a new Table 10-1A. This new table was created to address concerns from local agencies regarding design requirements within the current regulation for sites with a high content of rock. To clarify and provide flexibility, the table includes three “Type R” soil identifiers describing a soil that contains a certain percentage and size of rock that is allowed, how it is to be applied to the soil, at what rate it is to be applied, and the depth of treatment sand that is required below the distribution system. This table will provide for more engineered design options in these soil types. While percentages of media sizes are determined by weight through ASTM gradation testing, the

Commission chose to also allow characterization of rock size percentages by volume, similar to USDA field methods, to provide designers the ability to evaluate rock percentages in the field. The Commission recommends that future discussions regarding changes to this regulation include consideration of whether the regulation should allow a facility to apply for a variance from the design criteria requirements outlined in Table 10-1A where alternative or additional testing methods have been conducted and where it can be demonstrated that the alternative design will provide equal or improved treatment of the effluent. *Staff comment: The addition of soil types will provide designers with more options although pressurization is still required for all rocky soils which has been the biggest and most costly challenge of the OWTS Regulations given that most of the soils in Gunnison County are rocky.*

The Commission modified Table 10-3 to clarify the manufactured media terminology by creating new categories for proprietary manufactured distribution media; “Enhanced Manufactured Media” and “Other Manufactured Media” (both defined in the definition section of this revision). Other Manufactured Media will receive a 0.9 reduction in system size, while Enhanced Manufactured Media will receive a 0.7 reduction in system size. Additional sections for these two types of manufactured media indicating design and installation criteria has been provided in section 43.10.G. The acceptance criteria for these products defined in section 43.13.E have also been expanded.

The Commission clarified Section 43.10.E.1.b by stating that the infiltrative surface may only be greater than four feet deep if TL2 or greater effluent is applied and the system is inspected and maintained as per section 43.14.D of this regulation. The Commission also modified the maximum infiltrative surface depth for systems installed on a slope. The 4 foot maximum depth will now be measured from the up-slope side of the trench or bed. This provides consistency throughout the regulation and promotes aerobic conditions within the treatment zone.

The Commission clarified various sections of the regulation by revising specific references of distribution “lines”, to distribution “laterals”.

The Commission inserted a sub-section in 43.10.E.2 which requires the forcemain or distribution pipe to be connected to a distribution header as near to the center of the header as possible. The intent is to provide more equal distribution to the entire distribution system.

The Commission moved and expanded the section on “Pressure Distribution” to ensure that system designs align with industry standards. This section now requires the following: the inclusion of pump information, drain-back volume and calculations or a design software reference that indicates equal flow to the entire distribution system will be provided, parallel distribution lines must not exceed four feet center to center and the outer distribution pipe must be located at least two feet to the sidewall and endwall, and flushing assemblies must be installed on each lateral and be accessible from grade. A LPHA may require that all effluent dosed to a pressure distribution system be screened prior to entering the distribution system. *Staff comment: Effluent screening is always required.*

The Commission modified the section on trenches by reducing the required distance between adjacent trenches from six feet to four feet (sidewall to sidewall) to assist in constructing systems on sites with steep slopes or restricted area.

The Commission modified the section on inspection ports by requiring a 4 inch minimum inspection port at the terminal end of each lateral in a trench system and at each corner of a bed system. This modification was implemented after discussions with local public health agencies

relative to the Commission's request in the original Statement of Basis and Purpose that stakeholders consider inspection ports at both ends of distribution lines.

The Commission modified the section on "Alternating Systems", now requiring each new soil treatment area in an alternating system meet the minimum sizing requirements of the regulation. The fifty percent sizing will remain for repairs to existing systems.

The Commission modified various sections of the regulation to provide a consistent size requirement for coarse aggregate (stone) when it is used. All applicable sections were changed to reference a range in size from ½" to 2 ½". AASHTO M 43 size No. 3 coarse aggregate is noted as meeting this specification.

The Commission modified and greatly expanded on Section 10.H, "Soil Replacement Systems" in response to local agency and practitioner comments. Three cases are now described. Case 1, for use with a soil type R; added soil must meet either the specifications of "preferred" or "secondary" sand media (as defined in section 43.11.C). Sand depth requirements and application rates are defined in Table 10-1A. Case 2, for use with a soil type R-1 (option 2); a maximum rock percentage and rock size has been defined. Soil depth requirements and application rates are defined in Table 10-1A. Case 3, for use when sand is proposed to be added above a soil type 1 – 5. Added soil must meet either the specifications of "preferred" or "secondary" sand media (defined in section 43.11.C). In each case where sand is added, a recent gradation of the sand media must be provided to ensure the quality of the product.

The Commission inserted a section that further defines the allowance for the reductions to setbacks in a repair situation where an existing OWTS is failing.

The Commission inserted a section for the allowance of "deep beds" in a repair situation of up to five feet deep. However, size adjustments allowing area reductions within Tables 10-2 and 10-3 may not be used in this case.

The Commission moved the section on Remediation Systems from section 43.13.F and included it within the section on "repairs", 43.10.I. The Commission also removed remediation systems from the divisions review for proprietary products acceptance and placed the acceptance under the control of the local public health agencies along with some specific review parameters.

Section 43.11 *(Section 11)*

The Commission modified the following items within the section on Sand Filters: The treatment levels for single-pass and recirculating sand filters was defined. General design parameters for sand filters were established to ensure that the design of such systems will comply with accepted industry standards. Exact specifications (effective size, and uniformity coefficient) for "preferred" and "secondary" sand media are defined in this section. A recent gradation of the sand media (no more than one month old) must be provided to ensure the quality of the product.

The Commission modified the following items within the section on a Unlined Sand Filters: Application rates and sand depth requirements for "preferred" and "secondary" sand media was defined relative to the quality of effluent the was applied to the infiltrative surface.

The Commission modified the following items within the section on a Lined Sand Filters: Application rates and sand depth requirements for "preferred" and "secondary" sand media was

defined. General design parameters for lined sand filters were established to ensure that the design of such systems will comply with accepted industry standards.

The Commission modified the following items within the section on Recirculating Sand Filters: General design parameters for recirculating sand filters were established to ensure that the design of such systems will comply with accepted industry standards. Specifications included, lateral and orifice spacing, recirculation ratios, gallons/dose, timer settings, media requirements, under-drain and liner requirements.

The Commission modified the section on “mound systems” to clarify design requirements and to bring the design criteria into alignment with accepted industry standards. The following items are noted: General mound design specifications, distribution piping requirements, sand media specifications, loading rates, vertical separation requirements, grading requirements, among others, have been further defined.

Section 43.12 *(Section 12)*

The Commission moved and expanded on Section 43.12.A in order to clarify its original intent. This section was moved to 43.8.A as it references “general design criteria” which is a more appropriate location. This section was expanded to ensure that all OWTS for single family homes are sized per the flow requirements from section 43.6.A.2, and that the installation of low-flow fixtures or the separation of toilet waste does not allow for the reduction in the size of an OWTS. This is also consistent with the requirements of Regulation 86. *Staff comment: FYI. This section is the basis for why small “graywater” systems are not allowed when used in conjunction with a composting or alternative toilet.*

The Commission inserted the section on “Non-Pressurized Drip Dispersal System” in response to local agency and practitioner comments. A Non-Pressurized Drip Dispersal System is considered a type of an evapotranspiration/absorption system. The general design specifications noted in the “Colorado Professionals in Onsite Wastewater Guidelines for the Design and Installation of Non-Pressurized Drip Dispersal Systems (NDDS) September, 2016” must be followed when these systems are proposed. *Staff comment: this is a great system option for fat or tight clay soils. This technology has been proven and is no longer considered “experimental” in our climate and at elevation.*

The Commission modified the section on Evapotranspiration and Evapotranspiration/Absorption Systems. General design parameters for evapotranspiration and evapotranspiration/absorption systems were established to ensure that the design of such systems will comply with accepted industry standards.

The Commission modified the section on “Treatment Systems Other Than Those Discharging Through a Soil Treatment Area or Sand Filter System”. The following item was added: “These types of systems must not allow drainage of effluent off of the property of origin.”

The Commission modified all references to “fecal coliform”. Those references were changed to “*E. coli*”.

Section 43.13 *(Section 13)*

The Commission modified section 43.13.D.3.b, reducing the number of residential home test sites for proprietary treatment products from twelve to six if the product received NSF/ANSI certification for the treatment level requested.

The Commission clarified section 43.13.D.3.j, noting that manufacturers that request continued acceptance of their product must submit a request for this acceptance and provide documentation of an actual installation to the Division.

The Commission clarified the section regarding the requirements for the testing of proprietary higher level treatment systems outside of Colorado.

The Commission revised section 43.13.E.1, noting that a “gravity” proprietary distribution product must provide equivalent storage volume to a rock and pipe system. Pressure distribution products are exempt from this requirement.

The Commission clarified section 43.13.E.1, noting that a proprietary distribution product must cover at least 90 percent of the excavation in order to receive sizing adjustments provided for in Table 10-3.

The Commission clarified section 43.13.F, providing more detail regarding the requirements for the acceptance of proprietary remediation products.

The Commission clarified the testing and reporting requirements for septic tank manufacturers’ testing of five percent of the tanks. The testing must be conducted “annually” and submitted to the Division, or the certifications from IAPMO, CSA or NPCA must be submitted to the Division on an annual basis.

Section 43.14 *(Section 14)*

The Commission modified section 43.14.C.2 by allowing the local public health agency to designate a separate entity to maintain the oversight of OWTS maintenance where reductions in soil treatment area or vertical/horizontal separation distances are applied. The enforcement of the requirements of the regulation must remain with the local agency.

The Commission modified section 43.14.D.2 in response to local agency comments. The regulation now allows for the local public health agency to designate a separate entity to conduct and maintain the oversight program for the inspection and maintenance of higher level treatment systems. However the enforcement of the requirements of the regulation will remain with the local board of health.

The Commission modified section 43.14.D.4.b. The frequency of inspection and maintenance for higher level treatment systems was changed to require, at a minimum, two inspections at six month intervals for the first year of system operation, then once every 12 months for the life of the system; or more stringent as required by the manufacturer or the local public health agency. The Commission recommended that future discussions regarding changes to this regulation explore whether higher level treatment systems should be required to conduct ongoing sampling for the life of that system.

The Commission inserted sections which define specific requirements of maintenance providers for higher level treatment systems. Providers must notify the LPHA when a contract has been

terminated, and the provider must obtain appropriate training for specific proprietary treatment products from the manufacturer.

The Commission declined to adopt a mandatory operations and maintenance requirement for all onsite wastewater treatment systems. The Commission recommends that future discussions regarding changes to this regulation explore what level of operations and maintenance is needed for the different levels of these systems and how that should best be accomplished. In addition, the Commission encourages the future discussions consider whether onsite treatments system professionals should have certification or training requirements.