COLORADO
Water Quality
Control Commission
Department of Public Health & Environment

NOTICE OF PUBLIC RULEMAKING HEARING
BEFORE THE
COLORADO WATER QUALITY CONTROL COMMISSION

SUBJECT:

For consideration of the adoption of revisions to the On-site Wastewater Treatment System, Regulation #43 (5 CCR 1002-43). Revisions proposed by the Water Quality Control Division, along with a proposed Statement of Basis, Specific Statutory Authority and Purpose, are attached to this notice as Exhibit 1.

In these attachments, proposed new language is shown with double-underlining and proposed deletions are shown with ~~strikeouts~~. Any alternative proposals related to the subject of this hearing will also be considered.

During the commission's consideration of whether to approve this notice of rulemaking, the commission determined that there is not a likelihood of significant controversy during the rulemaking process. Therefore, the commission has chosen to pursue an alternative rulemaking process consistent with section 24-4-103(4)(a) C.R.S.; and section 21.3(C)(5) of the Procedural Rules. It is the goal of the commission to complete this rulemaking without oral testimony.

SCHEDULE OF IMPORTANT DATES

Written comments due	02/28/2018 5 pm	Additional information below.
Rulemaking Deliberations	03/12/2018 10:00 am	Florence Sabin Conference Room Department of Public Health and Environment 4300 Cherry Creek Drive South Denver, CO 80246

HEARING SUBMITTALS:

For this hearing, the commission will receive all submittals electronically. Submittals must be provided as PDF documents, except for raw data exhibits which may be provided as Excel workbooks. Sumbittals may be emailed to cdphe.wqcc@state.co.us, provided via an FTP site, CD or flash drive, or otherwise conveyed to the commission office so as to be received no later than the specified date.

PARTY STATUS:

Pursuant to section 21.3(D) of the commission's Procedural Rules, there shall be no party status for this rulemaking proceeding.

WRITTEN COMMENTS:

The commission encourages input from interested members of the pubic. Written comments should be emailed to cdphe.wqcc@state.co.us by 02/28/2018.

SPECIFIC STATUTORY AUTHORITY:

The provisions of sections 25-10-101 to 25-10-113; C.R.S., provide the specific statutory authority for consideration of the regulatory amendments proposed by this notice. Should the commission adopt the regulatory language as proposed in this notice or alternative amendments, it will also adopt, in compliance with section 24-4-103(4) C.R.S., an appropriate Statement of Basis, Specific Statutory Authority, and Purpose.

Dated this 11th day of December, 2017 at Denver, Colorado.

WATER QUALITY CONTROL COMMISSION

Digitally signed by Trisha Oeth
DN: cn=Trisha Oeth, o, ou=Water Quality Control Commission, email=trisha.oeth@state.co.us, c=US
Date: 2017.12.11 10:20:08 -07'00'

Trisha Oeth, Administrator

EXHIBIT 1
WATER QUALITY CONTROL DIVISION

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Water Quality Control Commission

REGULATION NO. 43 - ON-SITE WASTEWATER TREATMENT SYSTEM REGULATION

5 CCR 1002-43

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43.3 Definitions

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120. "Sewage" means a combination of liquid wastes that may include chemicals, house wastes, human excreta, animal or vegetable matter in suspension or solution, and other solids in suspension or solution, and that is discharged from a dwelling, building, or other establishment. See also Wastewater, domestic.

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Table 3-1 Abbreviations and Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
C.R.S.	Colorado Revised Statutes
CBOD	Carbonaceous Biochemical Oxygen Demand
CPOW	Colorado Professionals in Onsite Wastewater
CSA	Canadian Standards

	Association
ETL	Electrical Testing Laboratories
gpd	gallons per day
IAPMO	International Association of Plumbing and Mechanical Officials
ISDS	Individual Sewage Disposal System
LTAR	Long-term Acceptance Rate
mg/L	milligrams per Liter
MPI	Minutes Per Inch
NAWT	National Association of Wastewater Technicians
NDDS	Non-pressurized Drip Dispersal System
NPCA	National Precast Concrete Association
NRTL	Nationally Recognized Testing Laboratory
NSF	National Sanitation Foundation
OWTS	On-site Wastewater Treatment System(s)
STA	Soil Treatment Area
TL	Treatment Level
TN	Total Nitrogen
TSS	Total Suspended Solids
UL	Underwriters' Laboratories

43.4 Applicability

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B. Permit Application Requirements and Procedures

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5. Other Fees

a. A local board of health may set fees for inspections, percolation tests, soil evaluation, and other services performed by the local public health agency. The fees must be no greater than required to offset the actual indirect and direct costs of the services, and must not exceed the maximum amounts specified in section 25-10-107, C.R.S.

b. Surcharge - The local public health agency must collect a fee of twenty-three dollars for each permit issued for a new, repaired, or upgraded OWTS. Of that fee, the local public health agency must retain three dollars to cover the local public health agency's administrative costs and twenty dollars must be transmitted to the ~~state treasurer~~Colorado Department of Public Health and Environment for use in funding the state's OWTS program~~, who must deposit that sum in the water quality control fund created in section 25-8-502(1)(c), C.R.S~~.

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43.6 Wastewater Flow and Strength

A. Wastewater Flows

1. A local public health agency may require the installation of a meter to measure flow into the facility or the OWTS.

2. Single-Family Residential Homes:

a. Design flow per person must be 75 gallons per day (gpd).

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43.9 Design Criteria – Components

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I. Wastewater Pumping and Dosing Siphon Systems

1. Pumps

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b. Pumps must be certified to ~~the applicable~~ UL778 ~~or CSA~~ electrical safety standard, bear the seal of approval of CSA, UL or an equivalent testing program, and be constructed of corrosion resistant materials.

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2. Floats and Switches

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c. Float switches must be certified to the ~~applicable~~ UL60947-4, or CSA C22.2 No. 205-M1983 electrical safety standards, bear the seal of approval of CSA, UL or

an equivalent certification program, and be constructed of corrosion resistant materials.

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7. Controls

a. Control panels or other electrical boxes used to control the functions of an OWTS must comply with the following, as appropriate:

(1) The pump system must have an audible and visual alarm notification in the event an excessively high water condition occurs.

(2) The pump must be connected to a ~~control~~circuit breaker separate from the alarm breaker and from any other control system circuits.

(3) An electrical disconnect must be provided within the line of sight of the pump chamber.

(4) The pump system must be provided with a means that will allow the pump to be manually operated; such as an H.O.A. switch (Hand/Off/Auto).

(5) The pump system for pressure dosing and higher level treatment systems must have a mechanism for tracking both the amount of time the pump runs and the number of cycles the pump operates.

(6) Must bear the seal indicating acceptable product testing from~~of~~ a U.S. Department of Labor, Occupational Safety and Health Administration Nationally Recognized Testing Laboratory (NRTL) (https://www.osha.gov/dts/otpca/nrtl/nrtllist.html), such as UL or ETL.

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43.10 Design Criteria – Soil Treatment Area

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Table 10-1A Design Criteria for Soils with High Rock Content (Type "R" Soils) [1,2,3,4]

Soil Type, Percentage of Rock, LTAR, Distribution				Required Sand or Media Depth Relative to the Quality of Effluent Applied to the Distribution System				
Soil Type	**Percentage and Size of Rock[5]**	**Maximum LTAR (Gal./sq.ft./ day)**	**Type of Distribution Required**	**Treatment Level 1[6]**	**Treatment Level 2**	**Treatment Level 2N**	**Treatment Level 3**	**Treatment Level 3N**
R-0	Soil Type[7] 1 with more than 35% Rock (>2mm)	Unlined Sand Filter: 1.0 for "Preferred Sand Media"; 0.8 for "Secondary Sand Media"	Pressure Distribution[8]	Minimum 3-foot deep Unlined Sand Filter	Minimum 3-foot deep Unlined Sand Filter	Minimum 2.5-foot deep Unlined Sand Filter	Minimum 2.5-foot deep Unlined Sand Filter	Minimum 2-foot deep Unlined Sand Filter
R-1; Option 1	Soil Type[7] 2 – 5, >35 - 65% Rock (>2mm) ; with ≥50% of the Rock <20 mm (3/4 inch)	Use TL1 LTAR from Table 10-1 for the soil type corresponding to the soil matrix, with a maximum LTAR of 0.8	Pressure Distribution[8]	Minimum 2-foot deep Unlined Sand Filter	Minimum 1-foot deep Unlined Sand Filter	Minimum 1-foot deep Unlined Sand Filter	Sand media not required	Sand media not required

R-1; Option 2	Soil Type[7] 2 and 2A, >35 - 65% Rock (>2mm); with ≥50% of the Rock <20 mm (3/4 inch)	The allowable LTAR's are defined in each individual treatment level column in this Table	Pressure Distribution[8]	Remove, mix, replace 4 feet of existing material; with a maximum LTAR of 0.6	Remove, mix, replace 2 feet of existing material; with a maximum LTAR of 0.7	Remove, mix, replace 2 feet of existing material; with a maximum LTAR of 0.7	Remove, mix, replace 2 feet of existing material; with a maximum LTAR of 0.8	Remove, mix, replace 2 feet of existing material; with a maximum LTAR of 0.8
R-2	Soil Type[7] 2 – 5, >65 Rock (>2mm), **OR** ≥50% of Rock >20 mm (3/4 inch)	Use TL1 LTAR from Table 10-1 for the soil type corresponding to the soil matrix, with a maximum LTAR of 0.8	Timed, Pressure Distribution[8]	Minimum 3-foot deep Unlined sand filter	Minimum 3-foot deep Unlined Sand Filter	Minimum 2.5-foot deep Unlined Sand Filter	Minimum 2.5-foot deep Unlined Sand Filter	Minimum 2-foot deep Unlined Sand Filter

1. General guidance for Table 10-1A: The intent of the soil type R-0 is to define a material that consists of a high percentage of rock, or rock fragments, and has a percolation rate of less than 5 mpi. Soil types R-1 and R-2 consist of a high percentage of rock or rock fragments, but have a percolation rate of greater than 5 mpi. Soil types R-0 and R-2 are considered to be a "limiting layer".

2. No sizing adjustments are allowed for systems placed in type "R" soils. The maximum LTAR's are provided in this table

3. The design of type "R" soil treatment systems must conform to sections 43.11.C.2 and 3.

4. All systems installed in a type "R" soil must be designed by a professional engineer.

5. The percentage of rock may be determined by a gradation conducted per ASTM standards D 6913,

6. Type "R" soil treatment systems that are designed per the criteria noted in the Treatment Level 1 column of this table do not require O/M oversight by the LPHA.

7. The "Percentage and Size of Rock" column references the soil types noted in Table 10-1.

8. Design of the pressure distribution system for type "R" soils shall comply with the requirements of sections 43.11.C.2.b, c, e, f, g, h and i.

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43.11 Design Criteria – Higher Level Treatment Systems

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C. Sand Filters

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5. Recirculating Sand Filter, Minimum Requirements:

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f. Intermediate gravel layer:

(1) An intermediate layer of pea gravel, two inches in thickness, must be placed between the coarse underdrain media and the sand filter media to prevent the migration of sand into the lower layer of under-drain gravel. (ASTM C 33, No. 8, coarse aggregate meets this specification).

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43.12 Design Criteria – Other Facilities

A. Evapotranspiration and Evapotranspiration/Absorption Systems:

1. Non-Pressurized Drip Dispersal System (NDDS):

a. An NDDS is considered a type of evapotranspiration/absorption system. However as specific design criteria is provided for an NDDS, they are exempt from the additional requirements of section 43.12.A.2, 3 and 4.

b. The design of a NDDS must follow the procedures stated in the document titled: *The Colorado Professionals in Onsite Wastewater Guidelines for the Design and Installation of Non-Pressurized Drip Dispersal Systems (NDDS), Revision* September, *2016* ~~is the procedural guideline in the design of a NDDS and must be followed when an NDDS is proposed~~. The document is available from Colorado Professionals in Onsite Wastewater (www.cpow.net).

c. The width of an NDDS system may be wider than 12 feet.

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43.16 Materials Incorporated by Reference

Throughout these regulations, standards and requirements by outside organizations have been adopted and incorporated by reference. The materials incorporated by reference cited herein include only those versions that were in effect as of April 10, 2017, and not later amendments to the incorporated material.

Materials incorporated by reference are available for public inspection during normal business hours from the Water Quality Control Division, 4300 Cherry Creek Drive South, Denver, Colorado 80246. Copies may be purchased from the source organizations listed below.

AASHTO, American Association of State Highway and Transportation Officials
444 North Capitol Street, NW, Suite 249
Washington, DC 20001
Phone: 202-624-5800
Email: info@aashto.org
www.transportation.org

ANSI, American National Standards Institute
25 West 43rd Street, 4th floor
New York, NY 10036
Phone: 212.642.4900
www.ansi.org

ASTM, American Society for Testing and Materials
ASTM International
100 Barr Harbor Drive
PO Box C700
West Conshohocken, PA 19428-2959
Phone: 610.832.9500
Email: service@astm.org
www.astm.org

CSA, Canadian Standards Association
CSA Group Testing and Certification Inc.

178 Rexdale Boulevard
Toronto, Ontario M9W 1R3
Canada
Phone: 800-463-6727
Email: sales@csagroup.org
www.csagroup.org

ETL, Electrical Testing Laboratories
The ETL Listed Mark is from Intertek Testing Services NA, Inc. (ITSNA)
545 East Algonquin Road, Suite F
Arlington Heights, Illinois 60005
Phone: 800 967 5352
www.intertek.com

IAPMO, International Association of Plumbing and Mechanical Officials
International Association of Plumbing and Mechanical Officials EGS (IAPMO)
4755 East Philadelphia Street
Ontario, CA 91761
Phone: 909-472-4100
Email: iapmo@iapmo.org
www.iapmo.org

NPCA, National Precast Concrete Association
1320 City Center Drive, Suite 200
Carmel, IN 46032
Phone: 800-366-7731
www.precast.org

NSF, National Sanitation Foundation
NSF International (NSF)
789 North Dixboro Road
Ann Arbor, Michigan 48105
Phone: 734-769-8010
Email: info@nsf.org
www.nsf.org

UL Underwriters Laboratories
Underwriters Laboratories Inc.
333 Pfingsten Road
Northbrook, Illinois 60062
Phone: 847.272.8800
Email: CustomerExperienceCenter@ul.com
www.ul.com

Standard Methods for the Examination of Water and Wastewater, 21st edition.
A joint publication of the American Public Health Association, American Water Works Association, and Water Environment Federation
Phone: 877-574-1233
Email: standardmethods@wef.org
www.standardmethods.org/Buy/

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~~43.25~~ Statement of Basis, Specific Statutory Authority and Purpose: March 12, 2019 Rulemaking, Effective April 30, 2018

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

At its March 12, 2018 rulemaking hearing, the Commission revised several sections in response to comments from the Office of Legislative Legal Services that additional information was needed to comply with section 24-4-103(4), C.R.S. The Commission conducted a "written comment only rulemaking hearing" to address these relatively minor issues as described below.

There were some abbreviations used in the text that were not included in the table of abbreviations and acronyms, so Table 3-1 was expanded to include the following: CPOW, ETL, and NRTL.

In section 43.4.B.5.b, there was a reference to a section of the Water Quality Control Act and the water quality fund in regards to the requirement for counties to remit their state surcharge payments. The statutory cross-reference and the fund are no longer in existence. Section 43.4.B.5.b was therefore revised to clarify where counties are to send their surcharge payments to the state.

In section 43.9.I.1.b, the certification reference for pumps was unclear. The section was modified to indicate the UL778 electrical safety standard for pumps.

In section 43.9.I.2.c, the certification reference for float switches was unclear. The section was revised to indicate the UL60947-4 and CSA C22.2 No. 205-M1983 electrical safety standards for the float switches.

In section 43.9.I.7.a.6, the Nationally Recognized Testing Laboratory designation did not identify the source of the designation and was unclear about the seal requirement. Therefore, the section was modified to clarify that the seal indicates acceptable product testing, and to identify the U.S. Department of Labor, Occupational Safety and Health Administration as establishing the designation for testing laboratories.

In Table 10-1A, footnote 5 indicated that the gradation could be performed following ASTM standards or a field evaluation by volume, but did not include identification of the ASTM standard. The footnote was updated to identify ASTM standard D6913 for gradations.

In section 43.11.C.5.f.1, the previous reference to an acceptable example aggregate was in parentheses, but unclear. The section was revised to clarify that the example aggregate meets the requirement for the intermediate layer of pea gravel.

In section 43.16, it was noted that standards developed by national technical organizations and identified in Regulation 43 were available for viewing at the Division office or could be purchased from the national organizations, but did not indicate where copies are available from those national organizations. The section was thus expanded to include contact information for the national organizations.

Separate from the Office of Legislative Legal Services review, there were a few formatting and typographical errors that were identified in the previous version (e.g., missing words, double period). These errors were corrected in the rulemaking.
