

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Water Quality Control Commission

REGULATION NO. 84 - RECLAIMED WATER CONTROL REGULATION

5 CCR 1002-84

[Editor's Notes follow the text of the rules at the end of this CCR Document.]

84.1 AUTHORITY AND MATERIALS INCORPORATED BY REFERENCE

- (A) This regulation is promulgated pursuant to the Colorado Water Quality Control Act (CWQCA) section 25-8-101 through 25-8-702, C.R.S. In particular, it is promulgated under sections 25-8-202, 25-8-205, and 25-8-205.8, C.R.S.
- (B) Materials Incorporated by Reference
- (1) Any state regulation incorporated by reference is available at no cost online at sos.state.co.us.
 - (2) Any state statute incorporated by reference is available at no cost online in the Colorado Revised Statutes (CRS) at <https://leg.colorado.gov/agencies/office-legislative-legal-services/colorado-revised-statutes>.
 - (3) All other materials incorporated by reference may be examined at any state publications depository library or the Department at:

Colorado Department of Public Health and Environment Water Quality Control Division
4300 Cherry Creek Drive South Denver, Colorado 80246-1530 (303) 692-3500.

84.2 PURPOSE

The purpose of this regulation is to establish requirements, prohibitions, standards and concentration limits for the use of reclaimed water to protect public health and the environment while encouraging the use of reclaimed water.

84.3 SEVERABILITY

The provisions of this regulation are severable, and if any provisions or the application of the provisions to any circumstances is held invalid, the application of such provision to other circumstances, and the remainder of this regulation shall not be affected thereby.

84.4 APPLICABILITY

This regulation applies to the use of reclaimed water treated by centralized reclaimed water treatment systems and localized reclaimed water treatment systems for the Authorized Reclaimed Water Uses listed in section 84.10, Table A of this regulation (industrial, landscape irrigation, commercial, fire protection, agricultural irrigation and toilet and urinal flushing). Reclaimed water that is used or provided for use by a Treater or User for any other purpose that is not listed as an authorized use is prohibited and a violation of this regulation. Recreational uses of reclaimed water are strictly prohibited (e.g. swimming, dog swimming, fishing, boating, stand up paddle boarding, etc.) This regulation does not apply to wastewater that has been treated and released to state waters prior to subsequent use or to wastewater that has been treated and used at a domestic wastewater treatment plant site for landscape irrigation or process uses. Treaters and Users that have been granted a variance from provisions of this regulation, or have additional requirements may have different conditions that are specified in their Treater and User Authorizations. This regulation applies to individual Treaters and Users, as defined below.

84.5 DEFINITIONS

The following definitions shall apply:

- (1) Agricultural Irrigation means use of reclaimed water for irrigation of crops and trees, including Non-food Crop Irrigation and Silviculture, Non-Commercial Food Crop Growing Operation, Commercial Food Crop Growing Operation, Resident-Controlled Food Crop Irrigation and Edible and Non-Edible hemp.
- (2) Agronomic Rate means the rate of application of reclaimed water and associated nutrients to plants that is necessary to satisfy the plants' nutritional and watering requirements while strictly minimizing the amount of nutrients that run off to surface waters or which pass below the root zone of the plants.
- (3) Automated Vehicle Washing means the cleaning of vehicles and associated equipment, such as trailers, where automated equipment is used to apply spray water, cleaning products, and/or rinse water, where there is no public exposure to reclaimed water under normal operations and only limited and controlled contact with reclaimed water by trained workers.
- (4) Backflow Prevention Assembly has the same meaning as the term "backflow prevention assembly" as defined in Colorado Primary Drinking Water Regulations 5 CCR 1002-11 (Regulation #11).
- (5) Backflow Prevention Method has the same meaning as the term "backflow prevention method" as defined in Colorado Primary Drinking Water Regulations 5 CCR 1002-11 (Regulation #11).
- (6) Bag Filters means pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed of a non-rigid, fabric filtration media housed in a pressure vessel in which the direction of flow is from the inside of the bag to the outside.
- (7) Cartridge Filters means pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed as rigid or semi-rigid, self-supporting filter elements housed in pressure vessels in which flow is from the outside of the cartridge to the inside.
- (8) Centralized reclaimed water treatment system or Centralized System means a domestic wastewater treatment works that receives domestic wastewater from a diverse service area for treatment to produce reclaimed water for beneficial use where the service area has meaningful inputs from industrial or other diluting sources.

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- (9) Certified Cross-Connection Control Technician has the same meaning as the term “certified cross-connection control technician” as defined in Colorado Primary Drinking water Regulations 5 CCR 1002-11 (Regulation #11).
- (10) Certified Operator has the same meaning as the term “certified operator” as defined in Water and Wastewater Facility Operators Certification Requirements 5 CCR 1003-2 (Regulation #100).
- (11) Commercial Food Crop Growing Operation means a “covered farm” under the Rules Pertaining to the Administration and Enforcement of the Produce Safety Act, 8 CCR 1202-17.
- (12) Commercial Laundry means a facility that uses water to clean clothing and other textile products where only laundry workers operate the washing machines and cleaning equipment, where there is no public exposure to reclaimed water under normal operations and only limited and controlled contact with reclaimed water by trained workers.
- (13) Conventional Filtration means a series of processes including coagulation, flocculation, sedimentation (or equivalent form of clarification), and granular media filtration.
- (14) Cultivator means any individual or individuals that are regularly working with irrigated crops, irrigation and/or soils that are irrigated with reclaimed water.
- (15) Direct Filtration means a series of processes including coagulation and granular media filtration but excluding sedimentation.
- (16) Division means the Water Quality Control Division of the Colorado Department of Public Health and Environment.
- (17) Edible Hemp means industrial hemp seeds, oils, flowers and other hemp materials used to make edible products, dermal products, and internal use products for human and animal consumption.
- (18) Evaporative Industrial Processes means the use of water in an industrial process where the benefit of such use requires the evaporation of water, requiring additional make-up water, where there is no public exposure to reclaimed water under normal operations and only limited and controlled contact with reclaimed water by trained workers.
- (19) Fire Protection - Nonresidential means firefighting activities where water is made available at fire hydrants, from fire trucks, and in fire sprinkler and interior standpipe systems in commercial/industrial buildings.
- (20) Fire Protection - Residential means firefighting activities where water is made available at fire hydrants, from fire trucks, and in fire sprinkler and interior standpipe systems at any residential structure where the occupants do not have access to the plumbing for maintenance and repair.
- (21) Flood and Sheet Irrigation means irrigation whereby water is delivered to a field by ditch, pipe or some other means and flows over the ground through the crop.
- (22) Implementation Requirements means mandated practices, measures and conditions that shall be implemented by Users as defined in section 84.10 for authorized uses of reclaimed water, and for which Treaters shall ensure, to the maximum extent practicable, that Users adhere to when using reclaimed water.
- (23) Industrial Hemp means a plant of the genus cannabis and any part of the plant, whether growing or not, containing delta-9 tetrahydrocannabinol concentration of no more than three-tenths of one percent on a dry weight basis (HB-35-61-101(7)17).
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- (24) Irrigation System means the facilities, piping and other equipment used for landscape and agricultural irrigation.
- (25) Landscape Irrigation means irrigation of areas of grass, trees, and other vegetation that are accessible to the public, including, but not limited to, parks, greenbelts, golf courses, and common areas at apartments, townhouses, commercial/business parks, and other similar complexes.
- (26) Lay-flat hose means an industrial, light weight, heavy duty, flexible hose with supporting fabric built into the walls, which lies flat when empty which is used to transfer large volumes of liquid under pressure. Numerous lengths of hose may be connected using fittings that produce leak-free connections. Lay-flat hoses used to convey reclaimed water must be selected, designed, installed, implemented and maintained in accordance with best industry practices appropriate for the system and conditions present and the manufacturer's specifications (including installation and implementation specifications) and to comply with the requirements in Regulation 84.
- (27) Legally Responsible Individual means a legal representative listed in the User Application and Site Management Plan and User Authorization and/or Treater's Application and Authorization that has authority to make legally binding commitments for the "User" or the "Treater."
- (28) Localized Reclaimed Water Treatment System or Localized System means a domestic wastewater treatment works that receives domestic wastewater from a single building, multiple buildings within a single property or area bounded by dedicated streets or ways, or a district designated by a City or County for treatment to produce reclaimed water for beneficial use where the source water does not have meaningful inputs from industrial or other diluting sources.
- (29) Management User means the legally responsible individual that manages a Resident-Controlled Food Crop Irrigation site that is responsible for educating residents, and, shall ensure, to the maximum extent practicable, that residents attain and maintain compliance with Regulation 84. The Management User has legal ability (regulation, ordinance, contract, or other acceptable mechanism) to have reclaimed water service terminated to a resident if the resident fails to comply with Regulation 84. A Management User can be a Treater.
- (30) Manual Non-Public Vehicle Washing means the cleaning of vehicles and associated equipment, such as trailers, where any or all of the following are applied manually in the cleaning process: spray water, cleaning products, and/or rinse water; where there is no public access to the vehicle washing facility and only limited and controlled contact with reclaimed water by trained workers.
- (31) Membrane Filtration means a pressure or vacuum driven separation process in which particulate matter larger than 1 micrometer is rejected by an engineered barrier, primarily through a size-exclusion mechanism, and which has a measurable removal efficiency of a target organism that can be verified through the application of a direct integrity test. This definition includes the common membrane technologies of microfiltration, ultrafiltration, nanofiltration, and reverse osmosis.
- (32) Non-Commercial Food Crop Growing Operation means any operations growing food crops that are not considered a "covered farm" under the Rules Pertaining to the Administration and Enforcement of the Produce Safety Act, 8 CCR 1202-17.
- (33) Non-Discharging Construction and Road Maintenance means the use of reclaimed water for non-potable applications where water is required for cooling, wetting, dust suppression, or other construction and road maintenance activities, where there is no public exposure to reclaimed water under normal operations and only limited and controlled contact with reclaimed water by trained workers.
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- (34) Non-Evaporative Industrial Processes means the use of water in an industrial process where water is not evaporated in the process and is used within a contained system, where there is no public exposure to reclaimed water under normal operations and only limited and controlled contact with reclaimed water by trained workers.
- (35) Non-edible Hemp means hemp that is used for cover crop, fiber and other products that are not for human consumption.
- (36) Non-food Crop Irrigation and Silviculture means use of reclaimed water for the irrigation of crops and trees, excluding crops produced for direct human consumption, forage crops for lactating dairy animals, and trees that produce nuts or fruit intended for human consumption.
- (37) Oil and Gas Operations means exploring for oil and gas, including conducting seismic operations and the drilling of test bores; siting, drilling, deepening, recompleting, reworking, or abandoning a well; producing operations related to any well, including installing flowlines; the generating, transporting, storing, treating, or disposing exploration and production wastes; and any constructing, site preparing, or reclaiming activities associated with such operations. (see COGCC Rules and Regulations - Series 100 - Definitions)
- (38) Person means an individual, corporation, partnership, association, state or political subdivision thereof, federal agency, state agency, municipality, commission, or interstate body.
- (39) Point of Compliance means a point identified by the Treater in the reclaimed water treatment or transmission system after all treatment has been completed and prior to dilution and blending of water has occurred. If reclaimed water is used for indoor non-potable uses within a building where plumbing fixtures are accessible by the general public, the "point of compliance" for disinfection residual is at the location where water is delivered to the occupied premises.
- (40) Potable Water has the same meaning as "Finished Water" as defined in Colorado Primary Drinking Water Regulations 5 CCR 1002-11 (Regulation #11).
- (41) Reclaimed Water is domestic wastewater that has received secondary treatment by a domestic wastewater treatment works (centralized system or a localized system) and such additional treatment as to enable the wastewater to meet the standards for approved uses.
- (42) Reclaimed Water Distribution System means the piping that distributes reclaimed water to the customer.
- (43) Repetitive Violation means a violation by a User or at a User Site that has been assigned corrective action in accordance with the Treater's required Enforcement Escalation Plan per section 84.6(F)(5) and has not achieved compliance within the timeframe required in accordance with the plan.
- (44) Resident-Controlled Landscape Irrigation means irrigation of areas of grass, trees, and other vegetation located on the property dedicated to a single residential property (e.g., the yard for a single residence such as a house, row home or duplex).
- (45) Resident-Controlled Food Crop Irrigation means irrigation of vegetables, fruits and other food crops located on the property dedicated to a single residential property (e.g. the garden for a single residence such as a house, row home or duplex).
- (46) Restricted Access means controlled and limited access to the areas where reclaimed water meeting Category 1 standards, as defined in section 84.7, is used.
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- (47) Reuse System Management Plan means a plan submitted to the Division with the Treater Application that describes how the Treater will comply with the requirements in section 84.6(A)(6).
- (48) Secondary Treatment means the biological treatment of wastewater to meet BOD₅, TSS; CBOD₅; and Oil and Grease numeric limitations in Regulations for Effluent Limitations 5 CCR 1002-62 (Regulation #62).
- (49) Site means any location using reclaimed water, per the approved Uses in section 84.10 Table A including associated conveyances or storage under the operational control of the User, and as such is subject to the Implementation Requirements in section 84.10.
- (50) Site Manager means an individual or individuals who are the representative(s) of the User responsible for educating trained workers, visitors and cultivators of the User's Site, and shall ensure, to the maximum extent practicable, that visitors and cultivators attain and maintain compliance with Regulation 84. Site managers must be fully trained, educated and well versed in Regulation 84 to ensure safe onsite practices amongst visitors and cultivators. The Site Manager has legal ability to enforce for non-compliance, and request that the Treater terminate service if violations continue for a period of time until corrective actions are taken as described in the Treater's Enforcement Escalation Plan in section 84.6(F)(5).
- (51) State Waters means any and all surface and subsurface waters which are contained in or flow in or through this state, but does not include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed (25-8-103(19), C.R.S.).
- (52) Toilet and Urinal Flushing or Fixture Flushing means the use of reclaimed water to flush toilets and urinals only in multifamily residential structures or nonresidential structures where the toilet and urinal installations are conducted in accordance with and conform to Article 155 of Title 12 [Plumbers] and Rules promulgated to that Article.
- (53) Trained Worker means a person employed at the site where reclaimed water is used, who has been provided with the information specific to the Implementation Requirements specified in section 84.10 that are applicable to that site's approved use(s) of reclaimed water.
- (54) Treater means a person who treats reclaimed water using a centralized reclaimed water treatment system or localized reclaimed water treatment system and provides reclaimed water to a User for the purpose of uses identified in section 84.10. A Treater contracted inspector also falls under this definition, and the Treater may also be a User.
- (55) Treatment Technique Requirement means a requirement that specifies a treatment technique(s) for a pathogen reduction target which results in a sufficient reduction in the level of the pathogen to comply with the requirements of Regulation #84.
- (56) Unrestricted Access means uncontrolled access to the areas where reclaimed water meeting the Category 2 standards, as defined in section 84.7, is used.
- (57) User means the entity or person listed as "User" in the User Application and Site Management Plan and User Authorization who uses reclaimed water and is responsible for the Site and for compliance with the requirements in section 84.9 and 84.10 of this regulation. A User may also be a Treater. A User may also be a person(s) designated by the User to use reclaimed water on a User Site.
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- (58) User Application and Site Management Plan (UASMP) means the information and documentation a User is required to submit to the Treater to be subsequently submitted to the Division by the Treater under section 84.9(A). For Resident-Controlled Landscape Irrigation and Resident-Controlled Food Crop Irrigation, the UASMP applies to the aggregate of residences managed by a Management User. For Non-Commercial Food Crop Growing Operation, the UASMP applies to the aggregate or irrigated areas being managed by a Site Manager.
- (59) Visitor means anyone visiting a site where reclaimed water is used and approved in Table A of section 84.10.
- (60) Washwater Applications means water used in washing of miscellaneous construction/ maintenance equipment, as well as concrete washout, mineral processing, and other similar uses where reclaimed water is used to remove material from equipment or a desired product, where there is no public exposure to reclaimed water under normal operations and only limited and controlled contact with reclaimed water by trained workers.
- (61) Zoo Operations means activities that are authorized uses under this regulation conducted within a zoo which is licensed by the USDA.

84.6 TREATER APPLICATION, TREATER AUTHORIZATION ISSUANCE AND TREATER RESPONSIBILITIES

- (A) Application to Treat and Distribute Reclaimed Water (Treater Application). To treat and distribute reclaimed water, Treaters shall submit a complete Treater Application to the Division and provide a Division approved copy of the Treater Authorization to the local health authority, using a form established by the Division that shall include:
- (1) Treater information:
- (a) Name of entity;
 - (b) Legally Responsible Individual's name;
 - (c) Address;
 - (d) Telephone number; and
 - (e) Email address.
- (2) For each reclaimed water treatment facility owned and/or operated by the Treater where domestic wastewater is treated for distribution:
- (a) Facility contact person's name;
 - (b) Address;
 - (c) Telephone number; and
 - (d) Email address (if different than the Legally Responsible Individual).
- (3) Information demonstrating the Treater's ability to comply with the applicable reclaimed water standards and treatment described in section(s) 84.7 and 84.8 of this regulation. Localized systems must also demonstrate the ability to comply with the applicable requirements described in section 84.16 of this regulation.

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- (4) Provide an 8.5" x 11" or 11" x 17" schematic of the treatment process showing the location of the proposed point(s) of compliance. Include the point of compliance for demonstration that secondary treatment has been attained which may be the same or different than the point where attainment of reclaimed water standards will be demonstrated. Include either:
 - (a) A copy of the site application approval letter and the approval letter for the reclaimed water treatment facility plans and specifications; or
 - (b) Evidence of submittal of a site application and plans and specifications to the Division (site application forms per Site Location and Design Regulations for Domestic Wastewater Treatment Works 5 CCR 1002-22 (Regulation # 22)).
 - (5) An analysis demonstrating that reclaimed water used for landscape irrigation or agricultural irrigation will be applied at or below agronomic rates. Landscape irrigation and agricultural irrigation uses may also be subject to or limits as contained in a control regulation governing the watershed within which the irrigation occurs.
 - (6) A reuse system management plan which includes:
 - (a) A description of the proposed reclaimed water treatment and distribution systems;
 - (b) A description of how the Treater will comply with all of the applicable Treater Responsibilities in section 84.6(F);
 - (c) An Enforcement Escalation Plan (EEP with a description of how the Treater will comply with the requirements in section 84.6(F)(5);
 - (d) Evidence of the Treater's legal ability (regulation, ordinance, contract, or other acceptable means) to terminate service to a User if the User fails to comply with this regulation;
 - (e) A description of how the Treater will comply with the cross connection control requirements in sections 84.6(F)(12) and 84.6(F)(13), including but not limited to adherence, in coordination with other water suppliers, to any routine tests, surveys and inspections of backflow assemblies and methods and/or other approved cross connection control devices and methods.
 - (f) The requirements in section 84.6(A)(6) must be met two (2) years after the effective date of this regulation for Treater Authorizations with effective dates before the effective date of this regulation. Treaters that apply for Authorizations on or after the effective date of this regulation must comply with this requirement immediately.
 - (7) A certification statement as per section 84.14 of this regulation.
 - (8) For each User, a User Application and Site Management Plan (UASMP) developed in cooperation with the Treater that demonstrates how the User will comply with the Implementation Requirements in section 84.10.
 - (9) Affirmation that the reuse of this water by the Treater will not materially injure water rights. For localized systems located within the service area of a water service provider, the Treater Application shall include an affirmation that the proposed installation of a localized system is allowed by the water service provider.
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- (10) When reclaimed water is used for fire protection, the Treater Application shall also include a map indicating areas where reclaimed water is to be supplied for fire protection uses and identifying the fire protection authority(s) having jurisdiction. The Treater Application shall also include a letter from the fire protection authority(s) having jurisdiction indicating their approval of using reclaimed water for fire protection activities.
 - (11) Where the land application of reclaimed water is subject to limitations on concentration and/or loading of nitrogen or phosphorus pursuant to a control regulation adopted by the Water Quality Control Commission, a statement as to whether the Treater intends to have such limitations included in the notice of authorization issued under this regulation or under a permit issued pursuant to Regulation #61.
- (B) Division Review and Issuance of Treater Authorization. The Division shall either issue or deny Treater Authorization, or notify the Treater that the Treater Application is incomplete within sixty (60) calendar days of the Division's receipt of the application. If the Division determines that the Treater Application or Authorization needs public notice, the Division shall issue or deny the Authorization within ninety (90) calendar days. Upon the written agreement of the Treater, the review period may be extended for a period mutually agreed to by the Treater and the Division.
- (1) The Treater shall be notified in writing upon denial of the Treater Authorization of such action and the reason(s) for the denial. Reasons for denial may include but not be limited to determination that the Treater Authorization would not be protective of public health and the environment.
 - (2) The Division shall issue a separate Authorization to the Treater and to each User. Treaters and Users planning to use reclaimed water shall have or obtain a Treater and/or User Authorization from the Division prior to any use of reclaimed water.
- (C) Appeal of Issuance or Denial of Treater Authorization. The Treater or User, or any other person potentially adversely affected or aggrieved by Division issuance or denial of a Treater Authorization, may submit a request, within thirty (30) days of the date of issuance or denial, to the Administrator of the Water Quality Control Commission ("Commission"), for a hearing.
- (1) Such hearing shall be conducted pursuant to the requirements of the Procedural Rules 5 CCR 1002-21 (Regulation #21),
 - (2) The person requesting the hearing shall have the burden of proof in all hearings held pursuant to this section.
- (D) Treater Authorization Renewal and Modification. The Division will review individual Treater Authorizations to be considered for renewal no more frequently than every five (5) years, unless the conditions for modification in this part are met. The Treater shall provide information required by the Division as necessary to renew Treater Authorizations within 180 days of notification by the Division, unless a later deadline is provided by the Division.
- (1) A Treater Authorization may be modified for renewal in whole or in part earlier than five (5) years for reasons determined by the Division, including but not limited to, the following:
 - (a) Violation of any terms or conditions of the Treater Authorization;
 - (b) Obtaining a Treater Authorization by misrepresentation or failing to disclose any fact which is material to the granting or denial of a Treater Authorization or to the establishment of terms or conditions of the Treater Authorization;

- (c) Materially false or inaccurate statements or information in the Treater Application; or
 - (d) A determination that the authorized activity endangers human health or the classified existing uses of state waters and can only be regulated to acceptable levels by permit modifications or termination.
- (2) In determining a renewal frequency greater than five (5) years, the Division will also consider:
 - (a) Whether the Treater holds an exceptionally high number of User Authorizations that would make it difficult to comply with the renewal schedule;
 - (b) Any other circumstances that would make it difficult to comply with the renewal schedule.
- (E) Terms and Conditions of Treater Authorizations. Treater Authorizations issued by the Division shall contain such terms, limitations, and conditions as are deemed necessary by the Division to protect public health and the environment and to ensure compliance with this regulation, except for those Treater Authorizations that contain a schedule of compliance as determined by the Division. At a minimum, all Treater Authorizations shall contain the following:
 - (1) Treater information provided in sections 84.6(A)(1) and 84.6(A)(2) and a list of approved Users and their associated uses shall be included;
 - (2) Issuance and effective dates;
 - (3) The approved uses as defined in Table A of section 84.10, including the category of reclaimed water, and Implementation Requirements for each approved use in section 84.10, the associated numeric limit for each use, and requirements from sections 84.7; 84.8, and for localized systems, 84.16;
 - (4) For User Authorizations, the location(s) of use, a description of the approved use(s), and Implementation Requirements that meet the requirements of section 84.10, as applicable;
 - (5) A requirement that the Treater implement its Reuse System Management Plan that meets the requirements of section 84.6(A)(6) to ensure User compliance with this regulation. For User Authorizations, include a requirement that the User comply with the UASMP;
 - (6) Where the Treater has so requested in the Treater Application per section 84.6(A)(5), conditions defining limitations for concentration and loading of nitrogen and/or phosphorus pursuant to a control regulation adopted by the Water Quality Control Commission;
 - (7) A requirement to submit information to the Division requesting the amendment of a Treater Application prior to making any of the following significant changes:
 - (a) Change of contact for the Legally Responsible Individual or facility contact;
 - (b) Adding an additional User or deleting a User;
 - (c) When a Treater proposes any significant physical or operational changes;

- (d) Reclaimed Water treatment is discontinued (termination of a Treater Authorization); and
- (e) Transfer of ownership or operational control.
- (f) If reclaimed water is used for irrigation, when there is a significant change in the agronomic rate analysis; and
- (g) When any User governed by an existing User Authorization significantly modifies or changes its physical or operational use of reclaimed water, including, but not limited to, the addition of landscape area to be irrigated that is not contiguous to an existing approved area, addition of areas where reclaimed water is to be used for fire protection, addition of a new user or use in a new commercial or industrial process, or use in a new location.

Said request for amending the Treater Application shall be made at least thirty days prior to implementing a change described in subsections (a), (b), or (f), above, and at least sixty days prior to implementing a change described by subsections (c), (d), (e), or (g) above.

- (8) Terms for modification, revocation, renewal, or termination;
- (9) Required monitoring, as is reasonably necessary, to be performed by the User;
- (10) Reporting and record keeping requirements;
- (11) Public access restrictions, if applicable; and
- (12) A statement of applicable civil and criminal penalties.
- (13) For Resident-Controlled Food Crop Irrigation ONLY, Treater Authorizations will list requirements for information required in the Annual Report.

(F) Treater Responsibilities

- (1) Treaters must comply with this regulation, meet the reclaimed water categories and standards in sections 84.7 and 84.8 (when applicable), supply reclaimed water for authorized uses in accordance with Table A in section 84.10, and comply with the requirements that are authorized in the Treater Authorization.
- (2) Treaters must review UASMPs, and forms for amending UASMPs for reasons listed in section 84.9(E)(5), for the following prior to signing and submitting them to the Division:
 - (a) The UASMP includes the information required by this regulation and the Division form, and the information regarding site information, including but not limited to site maps, descriptions, and if applicable the agronomic rate analysis that accurately reflect the conditions that will be present at the Site when use of reclaimed water occurs.
 - (b) Ensure latitude and longitude of where reclaimed water is being used are complete and correct;
 - (c) All necessary attachments are included with the UASMP;
 - (d) Ensure the Legally Responsible Individual has signed/certified the UASMP;

- (e) Any modifications that require notification to the Division in section 84.6(D)(7); and
 - (f) Ensure that each answer describes an accurate process or mechanism to comply with the requirements in this regulation.
- (3) Maintain accurate records of the following:
 - (a) Copies of active/effective UASMP's and User Authorizations; and
 - (b) Copies of UASMPs and User Authorizations previously in effect for three (3) years following the termination date.
- (4) Develop and conduct an annual education and training program for all Users, Site Managers (when applicable) and Management Users (when applicable) that meets the following minimum requirements:
 - (a) A process to verify and document that all Users have received this education and training;
 - (b) A definition of reclaimed water and why it is not suitable for drinking (e.g. it is not treated to drinking water standards);
 - (c) Users should wash their hands with soap and potable water if possible after using reclaimed water, and that if soap and water are not available, to use hand sanitizer containing at least 60% alcohol. Users should be educated that hand sanitizer is not as effective as hand washing with soap and potable water;
 - (d) Users are required to implement the relevant requirements in this regulation for the prescribed authorized use(s) or be subject to the compliance and/or enforcement actions from both the Treater and the Division that result from non-compliance;
 - (e) The Implementation Requirements section 84.10 and User requirements in section 84.9;
 - (f) Ensure Users, Site Managers (when applicable) and Management Users (when applicable) are knowledgeable about and capable of implementing the requirements in the UASMP and User Authorization;
 - (g) That the UASMP and User Authorization must be kept onsite or be easily accessible;
 - (h) Strictly minimize ponding or runoff of reclaimed water; and
 - (i) For irrigation uses, that irrigation shall not occur in excess of agronomic rate.
- (5) Oversee the use of reclaimed water by Users to ensure, to the maximum extent practicable, that Users attain and maintain compliance with this regulation including but not limited to User adherence to the applicable Implementation Requirements in section 84.10 at User Sites. A description of the Treater's oversight of reclaimed water use by Users must be provided in the EEP per section 84.6(A)(6) submitted with the Reuse System Management Plan. The EEP shall include:
 - (a) How the Treater will identify User's repetitive and recalcitrant violations;

- (b) A range of enforcement responses the Treater will take to minimize and correct violations, including repetitive and recalcitrant violations;
 - (c) A description of time periods within which responses will take place;
 - (d) A process and description for termination of reclaimed water service to a Site (temporary or permanent) when necessary to obtain and maintain compliance;
 - (e) When applicable, a description of how Treaters will administer the inspection requirements for uses that require Site Managers and Management Users.
 - (f) The requirements in section 84.6(F)(5) must be met two (2) years after the effective date of this regulation for Treater Authorizations with effective dates before the effective date of this regulation. Treaters that apply for Authorizations on or after the effective date of this regulation must comply with this requirement immediately.
- (6) Implement the Treater's reuse system management plan as described in section 84.6(A)(6).
 - (7) Maintain records of inspections, non-compliance determinations and corrective actions for all inspections for at least three (3) years.
 - (8) Report violations to the division as described in section 84.11(C).
 - (9) Treaters shall furnish to the Division, within sixty days, any information which the Division may request to determine whether cause exists for modifying, revoking and reissuing the User or Treater Authorization, or to determine compliance with this regulation or the applicable User or Treater Authorization.
 - (10) Treaters that own or operate impoundments containing reclaimed water must do one of the following:
 - (a) Be authorized to discharge under a CDPS permit or
 - (b) Have received a waiver based on the seepage rate pursuant to section 61.14(9)(a)
 - (c) Comply with the Land Application Discharge requirements in 84.10(C) as applicable.
 - (d) The requirements in section 84.6(F)(10) and 84.10(A)(14) must be met five (5) years after the effective date of this regulation for Treater and User Authorizations with effective dates before the effective date of this regulation. Treaters and Users that apply for Authorizations on or after the effective date of this regulation must comply with this requirement immediately.
 - (11) Ensure all Users comply with the Land Application Discharge requirements in section 84.10(C).
 - (12) When supplementing reclaimed water with potable water, the Treater must ensure compliance with the Backflow Prevention and Cross-Connection Rule in Colorado Primary Drinking Water Regulations 5 CCR 1002-11 (Regulation #11).

- (13) Supplementing reclaimed water with other non-potable supplies shall not be allowed except through an appropriate cross connection control device or method, and shall be provided at all service connections between reclaimed water and other non-potable water sources. Routine inspections/surveys/tests must be completed in accordance with the Treater's cross connection control program as described in the Reuse System Management Plan per section 84.6(A)(6).
- (14) For Commercial Food Crop Growing Operation ONLY, Treaters must:
 - (a) On a quarterly basis, monitor for TDS and submit results (mg/L) to the Division in the Discharge Monitoring Reports, and email the results to all food crop irrigation Users. These results can be provided within a larger report.
 - (b) If requested by the User, the Treater must monitor and submit the following information upon request by the User within 60 days of the request, and to the Division in the Treater's Annual Report: Monitoring data that is less than 12 months old for nickel, arsenic, lead, cadmium and/or mercury concentrations from the Point of Compliance, or if the discharge is of substantially the same quality as the effluent discharged to state waters under a CDPS permit, from the point of compliance for that CDPS permit.
- (15) For Non-Commercial Food Crop Growing Operation ONLY, Treaters must:
 - (a) On a quarterly basis, monitor for TDS and submit results (mg/L) to the Division in the Discharge Monitoring Reports, and email the results to all food crop irrigation Users. These results can be provided within a larger report.
 - (b) If requested by the User, the Treater must monitor and submit the following information upon request by the User within 60 days of the request, and to the Division in the Treater's Annual Report: Monitoring data that is less than 12 months old for nickel, arsenic, lead, cadmium and/or mercury concentrations from the Point of Compliance, or if the discharge is of substantially the same quality as the effluent discharged to state waters under a CDPS permit, from the point of compliance for that CDPS permit.
 - (c) Treaters must notify the Legally Responsible Individual or associated entity and Site Manager if the single sample maximum *E. coli* standard, as authorized in the Treater Authorization, is exceeded.
 - (d) Conduct one inspection prior to the first use of reclaimed water at a site each calendar year with the Site Manager.
 - (e) During the irrigation season, conduct a second inspection during the period when irrigation is occurring each year and at least 30 days from the initial inspection (unless irrigation only occurs for 45 days) with the Site Manager.
 - (f) Inspections must involve checking that all of the applicable Implementation Requirements in 84.10 are being implemented, conditions at the Site are consistent with the UASMP and User Authorization and that Users are minimizing ponding and runoff by irrigating at an agronomic rate.

- (g) If a site is in non-compliance, unless the non-compliance issue(s) are corrected during the inspection, re-inspect the site once the correction(s) are made and document and keep record(s) of the corrective actions. Treater are required to inform and communicate with the User about compliance plans and corrective actions. If hoses are being used, the Treater, Site Manager and/or the Division reserve the right to lock the hose bibs until corrective actions are complete.
- (16) For Edible and Non-Edible Hemp Irrigation ONLY, Treater must:
- (a) If requested by the User, the Treater must monitor and submit the following information upon request by the User within 60 days of the request, and to the Division in the Treater's Annual Report: Monitoring data that is less than 12 months old for nickel, arsenic, lead, cadmium and/or mercury concentrations from the Point of Compliance, or if the discharge is of substantially the same quality as the effluent discharged to state waters under a CDPS permit, from the point of compliance for that CDPS permit.
 - (b) Inspections must be conducted with the Site Manager. Inspections must involve checking that all of the applicable Implementation Requirements in 84.10 are being implemented, conditions at the Site are consistent with the UASMP and User Authorization and that Users are minimizing ponding and runoff by irrigating at an agronomic rate.
 - (c) If a site is in non-compliance, unless the non-compliance issue(s) are corrected during the inspection, re-inspect the site once the correction(s) are made and document and keep record(s) of the corrective actions. Treater are required to inform and communicate with the User about compliance plans and corrective actions. If hoses are being used, the Treater, Site Manager and/or the Division reserve the right to lock the hose bibs until corrective actions are complete.
- (17) For Resident-Controlled Food Crop Irrigation ONLY, Treater must:
- (a) On a quarterly basis, monitor for TDS and submit results (mg/L) to the Division in the Discharge Monitoring Reports, and email the results to all food crop irrigation Users. These results can be provided within a larger report.
 - (b) If requested by the User, the Treater must monitor and submit the following information upon request by the User within 60 days of the request, and to the Division in the Annual Report: Monitoring data that is less than 12 months old for nickel, arsenic, lead, cadmium and/or mercury concentrations from the Point of Compliance, or if the discharge is of substantially the same quality as the effluent discharged to state waters under a CDPS permit, from the point of compliance for that CDPS permit.
 - (c) Notify the Legally Responsible Individual or associated entity and the Management User if the single sample maximum *E. coli* standard, as authorized in the Treater Authorization, is exceeded.
 - (d) Monitor water usage in gallons at minimum on a monthly basis to ensure agronomic rate is not exceeded. The UASMP shall indicate whether the monitoring responsibility belongs to the Treater or the Management User.
 - (e) At minimum, conduct 10% representative garden site visits annually with a representative that uses reclaimed water to ensure compliance with this regulation, the UASMP and User Authorization.

- (f) Inspections must involve checking that all of the applicable Implementation Requirements in 84.10 are being implemented, conditions at the Site are consistent with the UASMP and User Authorization and that Users are minimizing ponding and runoff by irrigating at an agronomic rate.
 - (g) If a site is in non-compliance, unless the non-compliance issues are corrected during the inspection, re-inspect the site once corrections are made and document and keep record(s) of the corrective actions. Treaters and Management Users are required to inform and communicate with the user about compliance plans and corrective actions.
- (18) For Oil and Gas Operations ONLY, Treaters must:
- (a) Conduct an initial site inspection for each new User just prior to drilling operation to ensure compliance with this regulation, the UASMP and User Authorization.
 - (b) Inspections must involve checking that all of the applicable Implementation Requirements in 84.10 are being implemented, conditions at the Site are consistent with the UASMP and User Authorization and that Users are minimizing ponding and runoff by irrigating at an agronomic rate.
 - (c) If a site is in non-compliance, unless the non-compliance issues are corrected during the inspection, re-inspect the site once corrections are made and document and keep record(s) of the corrective actions. Treaters and Management Users are required to inform and communicate with the user about compliance plans and corrective actions.

84.7 RECLAIMED WATER CATEGORIES AND STANDARDS

- (A) Category 1 Standards: Reclaimed water, for uses where Category 1 water is required, shall, at a minimum, receive secondary treatment with disinfection. The following reclaimed water standards shall apply at the point of compliance:

<u>Parameter</u>	<u>Limit</u>
<i>E. coli</i> /100 ml	126/100 ml monthly geometric mean and 235/100 ml single sample maximum.
Total Suspended Solids	30 mg/L as a daily maximum.

- (B) Category 2 Standards: Reclaimed water, for uses where Category 2 water is required, shall, at a minimum, receive secondary treatment with filtration and disinfection. The following reclaimed water standards shall apply at the point of compliance:

<u>Parameter</u>	<u>Limit</u>
<i>E. coli</i> /100 ml	126/100 ml monthly geometric mean and 235/100 ml single sample maximum.
Turbidity, NTU	Not to exceed 3 NTU as a monthly average and not to exceed 5 NTU in more than 5 percent of the individual analytical results during any calendar month.

- (C) Category 3 Standards: Reclaimed water for uses where Category 3 water is required shall, at a minimum, receive secondary treatment with filtration and disinfection. The following reclaimed water standards shall apply at the point of compliance:

Parameter	Limit
<i>E. coli</i> /100 ml	None detected in at least 75% of samples in a calendar month and 126/100 ml single sample maximum.
Turbidity, NTU	Not to exceed 3 NTU as a monthly average and not to exceed 5 NTU in more than 5 percent of the individual analytical results during any calendar month.

84.8 ADDITIONAL FILTRATION AND DISINFECTION REQUIREMENTS FOR USE OF RECLAIMED WATER PRODUCED FROM CENTRALIZED SYSTEMS (CATEGORY 3 PLUS)

- (A) The Treater must properly operate and maintain all required treatment systems when producing reclaimed water in accordance with this regulation, the Treater Authorization, and the site location and design approvals.
- (B) In addition to the factors to be considered and approved by the Division under Regulation #22, the following filtration and disinfection requirements apply to reclaimed water produced from centralized systems specifically for Category 3 uses of indoor toilet and urinal flushing, Non-Commercial Food Crop Growing Operation, and Resident-Controlled Food Crop Irrigation Sites. In the event of a conflict between Regulation #22 and the following filtration and disinfection requirements, the following requirements shall control over any conflicting filtration and disinfection requirements in Regulation #22:
- (1) In addition to the requirements listed in 84.7(C), the Treater must properly operate filtration and disinfection of secondary treated wastewater while producing reclaimed water that reliably achieves all of the following:
- (a) Disinfection that provides a minimum of 99.999 (5-log) inactivation of enteric viruses by at least one of the following treatment techniques.
 - (i) For free chlorine or monochloramines, log inactivation of viruses to be determined as referenced in 5-CCR-1002-11 and defined by the USEPA for disinfection of surface water (Hepatitis A).
 - (ii) Minimum UV of 40 mJ/cm² using a validated reactor per the Ultraviolet Disinfection Guidance Manual for the Final Long Term 2 Enhanced Surface Water Treatment Rule (November 2006).
 - (b) Filtration by any one of the following treatment techniques:
 - (i) Conventional or direct filtration.
 - (ii) Membrane filtration accepted for use by the division in accordance with section 11.8 of 5 CCR 1002-11.
 - (iii) Bag or cartridge filtration accepted for use by the division in accordance with section 11.8 of 5 CCR 1002-11.

- (iv) Alternative filtration technologies accepted by the Division in accordance with Wastewater Design Criteria Alternative Technology Acceptance that is third party challenge tested to reliably remove 99.9% of challenge particles that are at most 3 micron diameter.
- (c) The Treater must return any recycled spent filter backwash water, thickener supernatant, or liquids from the dewatering process to a location within the treatment process that is before the filtration technology or an alternative Division-approved location.
 - (i) For conventional or direct filtration, the location of return must be prior to the coagulant feed location.
 - (ii) For all other filtration technologies, the location of return must be prior to the filtration process and approved by the Division.

84.9 USER APPLICATION AND SITE MANAGEMENT PLAN (UASMP) AND USER AUTHORIZATION ISSUANCE

- (A) Users shall submit a User Application and Site Management Plan to the Treater using a form established by the Division that shall include:
 - (1) User information including:
 - (a) User organizational name;
 - (b) Legally Responsible Individual's name, title and contact information.
 - (2) Facility information including:
 - (a) Facility name, including the business operating name, if applicable;
 - (b) Address;
 - (c) Latitude and longitude (center of property);
 - (d) Site common name, if any.
 - (3) Other contact information including:
 - (a) Site contact name, title and contact information;
 - (b) Site Manager name, title and contact information (if applicable);
 - (c) Other contact types (optional);
 - (d) Certified Operator name, certification number and contact information (for Localized Systems only).
 - (4) A description of the following:
 - (a) How reclaimed water will be used;
 - (b) The potential for public contact during use of reclaimed water;

- (c) How the User intends to comply with the Implementation Requirements for the applicable use(s) identified in this application as specified in section 84.10; and
 - (d) A list of all water sources used at the location where reclaimed water is used.
- (5) All Users must provide a current map and/or diagram (8.5" x 11" or 11" x 17") that indicates all areas where reclaimed water will be used and/or applied. The following information must be provided on the map for the specific uses listed:
 - (a) For Toilet and Urinal Flushing, the map must indicate potable, non-potable and wastewater systems within the building.
 - (b) For Landscape and Agricultural irrigation, the map must indicate the acreage or distance around the perimeter of the Site being irrigated and type of landscape or agriculture being irrigated.
 - (c) For Fire Protection, the map must indicate areas where reclaimed water is to be supplied for fire protection uses, location(s) of fire hydrants.
 - (d) For Commercial Food Crop Growing Operations, Non-commercial Food Crop Growing Operations and Edible and Non-Edible Hemp Irrigation, the map must indicate locations of the required signage and hand sanitation stations in sections 84.10(B)(14), 84.10(B)(15) and 84.10(B)(17).
- (6) For irrigation uses, an analysis that demonstrates that reclaimed water used for irrigation will be applied at or below agronomic rates (guidance to calculate agronomic rate analysis: <https://cdphe.colorado.gov/water-quality-reclaimed-water-reuse-permits>).
- (7) UASMPs must be kept onsite (or easily accessible), current with regards to Site conditions (e.g. maps and/or diagrams, contact information, how the Site is complying with Implementation Requirements, etc.) and available for Division or Treater review.
- (8) A certification statement as per section 84.14 of this regulation. Each UASMP shall include a statement signed by the User, or a legal representative of the User, that certifies:
 - (a) The User has been provided a copy of Regulation 84 and agrees to comply with the applicable requirements of this regulation, in particular the Implementation Requirements described in section 84.10 the User Authorization and UASMP. If applicable, include the access restrictions when Category 1 reclaimed water is used. The User shall submit a certification statement per section 84.14 of this regulation with the information provided in this item; and
 - (b) The User agrees to allow the Treater or the Division reasonable access to the Site to determine whether the User is in compliance with this regulation, the User Authorization and UASMP, and/or to perform monitoring and analysis as may be required in section 84.16 for localized systems.
- (9) Irrigation uses may also be subject to limits as contained in a control regulation governing the watershed within which the irrigation occurs. The allocation or limit will be included in the User Authorization and/or a permit issued pursuant to Regulation # 61.
- (10) Each UASMP must be fully reviewed and signed by the Treater prior to submission to the Division.

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- (11) Each UASMP must be completed in its entirety and required attachments that are listed on the User Application (e.g. maps, agronomic rate analyses, reports, etc.) must be provided. UASMPs that are not complete will not be processed by the Division until all the required information and attachments are completed and submitted.
- (B) Division Review and Issuance of User Authorization. The Division shall either issue or deny the User Authorization, or notify the User that the UASMP is incomplete within sixty (60) calendar days of the Division's receipt of the application. If the Division determines that the UASMP or User Authorization needs public notice, the Division shall issue or deny the Authorization within ninety (90) calendar days. Upon the written agreement of the User, the review period may be extended for a period mutually agreed to by the User and the Division.
- (1) The User shall be notified in writing upon denial of the User Authorization of such action and the reason(s) for the denial. Reasons for denial may include but not be limited to determination that the User Authorization would not be protective of public health and the environment.
- (2) The Division shall issue a separate authorization to the Treater and to each User. Treaters and Users planning to use reclaimed water shall have or obtain a Treater and/or User Authorization from the Division prior to any use of reclaimed water.
- (C) Appeal of Issuance or Denial of User Authorization. The Treater or User, or any other person potentially adversely affected or aggrieved by Division issuance or denial of a User Authorization may submit a request, within thirty (30) days of the date of issuance or denial, to the Administrator of the Water Quality Control Commission ("Commission"), for a hearing.
- (1) Such hearing shall be conducted pursuant to the requirements of the Procedural Rules 5 CCR 1002-21, (Regulation #21).
- (2) The person requesting the hearing shall have the burden of proof in all hearings held pursuant to this section.
- (D) User Authorization Renewal and Modification. The Division will review individual User Authorizations to be considered for renewal no more frequently than every five (5) years, unless the conditions for modification in this part are met. The User shall provide information required by the Division as necessary to renew User Authorizations within 180 days of notification by the Division, unless a later deadline is provided by the Division. A User Authorization may be modified for renewal in whole or in part earlier than five (5) years for reasons determined by the Division, including but not limited to, the following:
- (1) Violation of any terms or conditions of the User Authorization;
- (2) Obtaining a User Authorization by misrepresentation or failing to disclose any fact which is material to the granting or denial of a User Authorization or to the establishment of terms or conditions of the User Authorization;
- (3) Materially false or inaccurate statements or information in the User Application; or
- (4) A determination that the authorized activity endangers human health or the classified existing uses of state waters and can only be regulated to acceptable levels by permit or termination.

- (E) Terms and Conditions of User Authorizations. User Authorizations issued by the Division shall contain such terms, limitations, and conditions as are deemed necessary to protect public health and the environment and to ensure compliance with this regulation, except for those User Authorizations that contain a schedule of compliance as determined by the Division. At a minimum, all User Authorizations shall contain the following:
- (1) User information provided in the UASMP in sections 84.9(A)(1), 84.9(A)(2), and 84.9(A)(3);
 - (2) Issuance and effective date;
 - (3) The applicable authorized use(s) as defined in Table A of section 84.10, including the category of reclaimed water, and Implementation Requirements that Users must execute for the authorized use(s) in section 84.10.
 - (4) The location(s) of use and a description of the approved use(s);
 - (5) A requirement to submit information using a form developed by the Division to the Treater requesting the amendment of a UASMP sixty (60) days, or an alternative timeline determined by the Treater, prior to making any of the following significant changes. The Treater must review, sign and submit the form to the Division thirty (30) days prior to the User making changes:
 - (a) Change of contact for Legally Responsible Individual, facility contact, Site Manager (if applicable) and Management User (if applicable);
 - (b) Transfer of ownership or operational control;
 - (c) If reclaimed water is used for irrigation, when there is a significant change in the agronomic rate analysis;
 - (d) When any User governed by an existing User Authorization significantly modifies or changes its physical or operational use of reclaimed water, including, but not limited to, the addition of landscape area to be irrigated that is not contiguous to an existing approved area, addition of areas where reclaimed water is to be used for fire protection, addition of a new User or use in a new commercial or industrial process, or use in a new location;
 - (e) A modification is made to the Site that would substantially change operations, reclaimed water usage and/or Implementation Requirements as described in section 84.10; or
 - (f) Reclaimed water use at the Site is discontinued (termination of User Authorization).
 - (6) Terms for modification, revocation, renewal, or termination;
 - (7) Required monitoring, as is reasonably necessary, to be performed by the User;
 - (8) Reporting and record keeping requirements;
 - (9) Public access restrictions, if applicable; and
 - (10) A statement of applicable civil and criminal penalties.

84.10 AUTHORIZED RECLAIMED WATER USES AND IMPLEMENTATION REQUIREMENTS

Table A: Authorized Uses of Reclaimed Water

Authorized Uses	Category 1	Category 2	Category 3	Implementation Requirements
INDUSTRIAL				
Evaporative Industrial Processes	Allowed	Allowed	Allowed	84.10(A) and 84.10(B)(1)
Non-Discharging Construction and Road Maintenance	Allowed	Allowed	Allowed	84.10(A) and 84.10(B)(2)
Non-Evaporative Industrial Processes	Allowed	Allowed	Allowed	84.10(A) and 84.10(B)(3)
Oil and Gas Operations	Not Allowed	Allowed	Allowed	84.10(A) and 84.10(B)(4)
Washwater Applications	Not Allowed	Allowed	Allowed	84.10(A) and 84.910(B)(5)
LANDSCAPE IRRIGATION				
Restricted Access	Allowed	Allowed	Allowed	84.10(A) and 84.10(B)(6)
Unrestricted Access	Not Allowed	Allowed	Allowed	84.10(A) and 84.10(B)(7)
Resident-Controlled	Not Allowed	Not Allowed	Allowed	84.10(A) and 84.10(B)(8)
COMMERCIAL				
Zoo Operations	Allowed	Allowed	Allowed	84.10(A) and 84.10(B)(9)
Commercial Laundries	Not Allowed	Allowed	Allowed	84.910(A) and 84.10(B)(10)
Automated Vehicle Washing and Manual Non-Public Vehicle Washing	Not Allowed	Allowed	Allowed	84.10(A) and 84.10(B)(11)
FIRE PROTECTION				
Nonresidential Fire Protection	Not Allowed	Allowed	Allowed	84.10(A) and 84.10(B)(12)
Residential Fire Protection	Not Allowed	Not Allowed	Allowed	84.10(A) and 84.10(B)(12)
AGRICULTURAL IRRIGATION				
Non-Food Crop Irrigation and Silviculture	Allowed	Allowed	Allowed	84.10(A) and 84.10(B)(13)
Commercial Food Crop Growing Operation	Not Allowed	Allowed	Allowed	84.10(A) and 84.10(B)(14)

Authorized Uses	Category 1	Category 2	Category 3	Implementation Requirements
Non-Commercial Food Crop Growing Operation	Not Allowed	Not Allowed	Allowed (Category 3 Plus)	84.10(A) and 84.10(B)(15)
Resident-Controlled Food Crop Irrigation	Not Allowed	Not Allowed	Allowed (Category 3 Plus)	84.10(A) and 84.10(B)(16)
Non-Edible Hemp Irrigation	Allowed	Allowed	Allowed	84.10(A) and 84.10(B)(17)
Edible Hemp Irrigation	Not Allowed	Not Allowed	Allowed (Category 3 Plus)	84.10(A) and 84.10(B)(17)
TOILET AND URINAL FLUSHING	Not Allowed	Not Allowed	Allowed (Category 3 Plus)	84.10(A) and 84.10(B)(18)

(A) Implementation Requirements. Implementation Requirements for All Authorized Reclaimed Water Uses

- (1) Cross Connection Control. Sites that supplement reclaimed water with potable and other non-potable water sources must be in compliance with the requirements in the Treater's cross connection control program as per sections 84.6(F)(12) and 84.6(F)(13).
- (2) Labeling of Conveyances and Appurtenances. If the use of reclaimed water is subject to Colorado's Plumbing Rules and Regulations (3 CCR 720-1), Users and Treaters must comply with the labeling requirements included therein, and this must be clarified in the UASMP. If the use of reclaimed water is not subject to Colorado's Plumbing Rules and Regulations, then water piping, conveyances and appurtenances that deliver reclaimed water shall be purple in color or the piping shall be installed with a purple identification tape or wrap the entire length of the piping and shall be embossed, or integrally stamped or marked, with the words: "NONPOTABLE RECLAIMED WATER – NOT FOR DRINKING or DO NOT DRINK". The requirements of 84.10(A)(2) shall not apply to existing underground irrigation and other piping and infrastructure that is not visible to the public. The Division has authority to require additional labeling requirements, or alternative labeling requirements contingent upon authorized uses of reclaimed water, accessibility, and public exposure in the UASMP and the User Authorization.
 - (a) The requirements in section 84.10(A)(2) must be met two (2) years after the effective date of this regulation for User and Treater Authorizations with effective dates before the effective date of this regulation. Users and Treaters that apply for Authorizations on or after the effective date of this regulation must comply with this requirement immediately.
- (3) Education and Training. All Users, Site Managers and Management Users must participate in the Treater's annual education and training program as required in section 84.6(F)(4). The Division has authority to require additional education and training requirements in the UASMP and the User Authorization contingent upon authorized uses of reclaimed water, accessibility, and public exposure, and as applicable public and environmental health information comes available.

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- (4) Signage Requirements. Signage is required to ensure the public and Users are informed that non-potable water is in use and that it is not for drinking. If the use of reclaimed water is subject to Colorado's Plumbing Rules and Regulations (3 CCR 720-1), Users and Treaters must comply with the signage requirements included therein, and this must be clarified in the UASMP. If the use of reclaimed water is not subject to Colorado's Plumbing Rules and Regulations, the signage requirements set forth herein are required. The Division has authority to require additional signage requirements contingent upon authorized uses of reclaimed water, accessibility, and public exposure in the UASMP and the User Authorization.
- (a) Signage shall read as follows: "NON-POTABLE RECLAIMED WATER IN USE-NOT FOR DRINKING or DO NOT DRINK."
- (b) Where plumbing is accessible, a sign that meets 84.10(A)(4) and indicates that maintenance and modifications can only be done by trained personnel. Separate signs are allowed.
- (c) Impoundments that contain reclaimed water must have at least one sign that meets 84.10(A)(4) unless the impoundment is restricted to the general public and is only accessible by trained personnel.
- (d) Signage must be visible and in the appropriate language to be understood by the majority of the Users and/or Site Visitors.
- (e) The requirements in section 84.10(A)(4) must be met two (2) years after the effective date of this regulation for User and Treater Authorizations with effective dates before the effective date of this regulation. Users and Treaters that apply for Authorizations on or after the effective date of this regulation must comply with this requirement immediately.
- (5) Reclaimed Water Use Areas. Use of reclaimed water shall be confined to the authorized use areas, operations or processes, and precautions shall be taken to ensure reclaimed water will not be sprayed or enter into any area not designated for application such as drinking water facilities and areas where food is being prepared.
- (6) Leak Repair. Leaks in plumbing, fixtures, equipment, sprinkler systems (indoor fire and outdoor), hoses, hose bibs and any other mechanism where reclaimed water is used or transmitted must be repaired immediately. If the leak cannot be repaired immediately, leak repair must be scheduled, and reclaimed water use must be discontinued until repairs can be made. Spills require reporting in accordance with §25-8-601(2) CRS.
- (7) Reclaimed Water Disposal. Disposal of reclaimed water from any storage, conveyance or other source whereby reclaimed water was used shall be done in such a manner that does not create a point source discharge requiring a NPDES or CDPS permit or does not create a spill that would require reporting in accordance with §25-8-601(2) CRS.
- (8) Operation of the Reclaimed Water Onsite Distribution or Irrigation System. Operation of the reclaimed water onsite distribution or irrigation system, including valves, outlets, couplers, and sprinkler heads, and residential, commercial or industrial facilities and equipment utilizing reclaimed water, shall be performed only by personnel authorized by the User and trained in accordance with the Treater's education and training program per section 84.6(F)(4) and the requirements in section 84.10(A) and applicable sections in 84.10(B).
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- (9) Vehicle and Tank Hauling. Vehicles and tank trailers used to haul reclaimed water must comply with the requirements in section 84.10(B)(4)(e).
 - (10) Users must submit the UASMP to the Treater to be reviewed and signed by the Treater prior to the Treater submitting it to the Division.
 - (11) Users must maintain an accurate UASMP onsite or in an easily accessible location.
 - (12) Users must report violations in accordance with section 84.11(C).
 - (13) Users shall furnish to the Division, within sixty days, any information which the Division may request to determine whether cause exists for modifying, revoking and reissuing the User Authorization, or to determine compliance with this regulation or the applicable User Authorization.
 - (14) Users that own or operate impoundments containing reclaimed water must do one of the following:
 - (a) Be authorized to discharge under a CDPS permit or
 - (b) Have received a waiver based on the seepage rate pursuant to section 61.14(9)(a)
 - (c) Comply with the Land Application Discharge requirements in 84.10(C) as applicable.
- (B) Implementation Requirements for Specific Authorized Reclaimed Water Uses.
- (1) Evaporative Industrial Processes
 - (a) If there is a significant likelihood for aerosols to drift to public or worker areas, signage meeting the requirements in section 84.10(A)(4) is required in those areas. Supplemental disinfection and disinfectant residual and/or public access restrictions are required.
 - (b) If Category 1 reclaimed water is used, public access to areas where reclaimed water is used must be restricted by time or by barrier.
 - (2) Non-Discharging Construction and Road Maintenance
 - (a) Applications rates or other measures shall be employed to minimize ponding or runoff from the area approved for application and use.
 - (b) The exterior of the tank shall be labeled with signage indicating the tank is transporting reclaimed water.
 - (c) Where there is potential for trained worker or public exposure to aerosols generated in the use, Users of Categories 1 and 2 reclaimed water shall employ measures to prevent frequent exposure of trained workers and the public to aerosols by one of the following methods:
 - i. Restricted access;
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- ii. A minimum setback distance of 100 feet between the nearest source of aerosol generations and areas where trained workers or the public are normally present;
 - iii. Physical barriers between aerosol sources and humans;
 - iv. Personal protective equipment to prevent inhalation;
 - v. Functionally equivalent measures approved by a qualified individual (e.g. a certified industrial hygienist); or
 - vi. Other measures approved by the Division and authorized in the User Authorization.
 - (d) If Category 1 reclaimed water is used, public access to areas where reclaimed water is used must be restricted by time or by barrier.
- (3) Non-Evaporative Industrial Processes
- (a) Where there is potential for worker or public exposure to aerosols generated in the use, Users of Categories 1 and 2 reclaimed water shall employ measures to prevent frequent exposure of trained workers and the public to aerosols by one of the following methods:
 - i. Implement onsite disinfection residual within the premise plumbing;
 - ii. Restricted access;
 - iii. A minimum setback distance of 100 feet between the nearest source of aerosol generations and areas where trained workers or the public are normally present;
 - iv. Physical barriers between aerosol sources and humans;
 - v. Personal protective equipment to prevent inhalation;
 - vi. Functionally equivalent measures approved by a qualified individual (e.g. a certified industrial hygienist); or
 - vii. Other measures approved by the Division and authorized in the User Authorization.
 - (b) A sign that meets the minimum requirements in section 84.10(A)(4) is required in the area(s) where reclaimed water is used.
 - (c) If Category 1 reclaimed water is used, public access to areas where reclaimed water is used must be restricted by time or by barrier.
- (4) Oil and Gas Operations
- (a) Comply with the educational requirements in section 84.10(A)(3) and:

- i. All staff managing reclaimed water and/or implementing the Implementation Requirements, the UASMP and the User Authorization must receive required training prior to their initial shift on the Site and annually thereafter.
 - ii. Each individual required to receive this education must affirm with a signature that the training was received. These training records must be available on site or easily assessable for the Division and/or Treater for review.
- (b) Comply with the minimum Signage Requirements in 84.10(A)(4) and:
 - i. For Sites under three acres, signs of at least 8.5 x 11" must be placed on portions of the perimeter within public view. For Sites over three acres but smaller than 25 acres, signs of at least 8.5 x 11" must be placed at no greater than 500 feet apart on any portions of the perimeter within public view. Distance and locations of signage must be described via map or description in the UASMP and User Authorization for the Site.
- (c) A Site Manager is required. Responsibilities and authority for Site Managers are:
 - i. Ensure an accurate UASMP and User Authorization are onsite or easily accessible, and when required per section 84.9(E)(5), submit UASMP modifications to amend the User Authorization to the Treater and Division.
 - ii. Maintain accurate records of signatures for Trained Workers and other individuals that use reclaimed water on the authorized Site who have been educated per 84.10(B)(4)(a).
 - iii. Ensure all staff managing reclaimed water and contracted workers who implement the requirements in this regulation and other individuals that use reclaimed water on the authorized Site are educated about reclaimed water per the education and training requirements in sections 84.6(F)(4), 84.10(A)(3) and 84.10(B)(4)(a).
 - iv. Ensure all staff managing reclaimed water and contracted workers who implement the requirements in this regulation and other individuals that use reclaimed water on the authorized Site are in compliance with the applicable Implementation Requirements in section 84.10 and the requirements in the UASMP and User Authorization.
 - v. Implement appropriate procedures and actions to minimize the occurrence of violations, and obtain compliance with the requirements of the UASMP and User Authorization. If necessary, implement sanctions for recalcitrant and repetitive violations that includes but is not limited to requesting termination of service of reclaimed water to the Site.
 - vi. Inspect Site prior to each approved use to ensure all of the requirements in the User Authorization and UASMP are in compliance.
 - vii. Ensure that there are no discharges to groundwater or state waters during "shut down" of a Site when discontinuing use of reclaimed water.

- viii. Report violations to the Treater and the Division and keep violations documented with the location information until use of reclaimed water ceases.
- (d) Requirements for lay-flat hoses, couplings, and other appurtenances:
 - i. Identify the conveyance as carrying non-potable water by labelling every section of pipe as “non-potable water” using stenciling or some other labelling mechanism. Alternatively, signage that states “non-potable water” can be placed at every coupling, joint or pump.
 - ii. During periods of reclaimed water use within the lay-flat conveyance, an additional method of identification must be utilized to clearly indicate that reclaimed water is being transported through the line. This must be accomplished by placing small flags, ribbon, tape, etc. labeled with “RECLAIMED WATER – NOT FOR DRINKING OR DO NOT DRINK” at the mid-point between couplings, joint or pump (each section of hose) or approximately every 350 feet. This requirement can be reduced in areas where access is limited (such as through private property), but must be identified in the UASMP.
 - iii. Pass a hydrostatic pressure test conducted in accordance with the UASMP using methods, procedures and practices that reflect best industry practices appropriate for the system and conditions present and that provides appropriate results to confirm leaks are not present in the conveyance system and comply with the requirements within Regulation 84. Results of testing must be available for verification during any Site inspection.
 - iv. Inspect the hose daily for leaks. If a leak is detected or discovered, immediately discontinue use until the leak has been properly repaired such that the leak is no longer present. Records of daily leak inspections must be maintained for a minimum of one year and kept onsite for Treater and Division review.
 - v. Install and operate appropriate leak detection equipment.
 - vi. All spills requiring reporting in accordance with §25-8-601 (2), CRS must be reported to CDPHE using the toll-free 24-hour environmental emergency and incident reporting line within 24 hours of being discovered. Spills must also be reported to the Treater within 24 hours.
 - vii. To protect potable water sources, backflow prevention or cross connection control equipment must be used when loading water from a potable water source.
 - viii. If lay-flat hose is extended through public or private property, property owners must be notified that non-potable, reclaimed water is being delivered through the lay-flat hose and that the hose should not be tampered with. The process used to notify property owners, including how the notification is issued and the timing of the notice, must be explained within the UASMP.

- ix. When lay-flat hose intersects a roadway, a hose protector ramp must be used to prevent vehicles and other equipment from directly driving over the hose.
- (e) Vehicles and tank trailers used to haul reclaimed water must follow the following requirements:
 - i. The exterior of the tank shall be labelled with signage indicating the tank is transporting non-potable water.
 - ii. The driver is required to notify the Treater and User of any spills of reclaimed water. All spills requiring reporting in accordance with §25-8-601(2) CRS must be reported to CDPHE using the toll-free 24-hour environmental emergency and incident reporting line.
 - iii. To protect potable water supplies, backflow prevention or cross connection control equipment must be used when loading water from a potable water source into tank labeled as non-potable.
- (f) When reclaimed water is delivered through temporary conveyances, the conveyance must meet the definition of lay flat hose as defined in section 84.5(26) or be constructed of HDPE material.
- (g) Disposal of reclaimed water from any storage, conveyance or other source whereby reclaimed water was used shall be done in such a manner that does not create a point source discharge requiring a NPDES or CDPS permit or does not create a spill that would require reporting in accordance with §25-8-601(2) CRS.
- (h) The Division and Treaters must be notified at least one (1) week prior to the installation of any lay-flat hose that is to be used for conveyance of reclaimed water. The Division and Treaters must also be notified within 24 hours of the removal of any lay-flat hose that has been utilized for conveyance of reclaimed water.
- (i) Prior to the commencement of any oil and gas operations at a pad site, Operator must complete an initial analysis of reclaimed water delivered to the Site and obtain results prior to use of reclaimed water for Oil and Gas Operation on Site.
 - i. The initial analysis must include an analytical method that characterizes and quantifies the microbiological water quality of the reclaimed water.
 - ii. If the reclaimed water remains on location, additional analyses using the same analytical method must be conducted on samples obtained from site bulk storage to ensure water quality is still appropriate to avoid introduction of sulfur reducing bacteria into the well formation. The frequency must be at least every 10 calendar days unless the UASMP documents that an alternative frequency can achieve this requirement.
 - iii. Each User will record the analytical results and will make those results available to the Treater or Division upon request.
 - iv. The UASMP shall include a detailed description of the analytical practice.

- (5) Washwater Applications
 - (a) Washing activities must be contained (e.g., flow into lined pit or approved concrete washout area, or within enclosed equipment), as to prevent any off-site runoff or discharge to groundwater. Workers shall be trained on the proper use and washing procedures when using reclaimed water.
 - (b) A sign that meets the minimum requirements in section 84.10(A)(4) is required in the area(s) where reclaimed water is used.
 - (c) Applications rates or other measures shall be employed to minimize ponding or runoff from the area approved for application and use.
 - (d) Where there is potential for trained worker or public exposure to aerosols generated in the use, Users of Category 2 reclaimed water shall employ measures to prevent frequent exposure of trained workers and the public to aerosols by one of the following methods:
 - i. Restricted access,
 - ii. A minimum setback distance of 100 feet between the nearest source of aerosol generations and areas where trained workers or the public are normally present,
 - iii. Physical barriers between aerosol sources and humans,
 - iv. Personal protective equipment to prevent inhalation,
 - v. Functionally equivalent measures approved by a qualified individual (e.g. a certified industrial hygienist), or
 - vi. Other measures approved by the Division and authorized in the User Authorization.
- (6) Restricted Access Landscape Irrigation
 - (a) Application rates or other measures shall be employed to minimize ponding or runoff from the area approved for application and use and prevent irrigation in excess of agronomic rate. Application rates must be controlled to ensure that associated pollutants do not pass through the root zone of the plants to be irrigated (e.g. automated irrigation schedule, rain shutoff devices, application at evapotranspiration rates adjusted for efficiency, daily inspections, or other means).
 - (b) Flood and sheet irrigation are prohibited.
 - (c) Ensure that direct and windblown spray and other means of human exposure from irrigation systems will be confined to the areas designated and approved in the User Authorization.
 - (d) There must be signage that meets the requirements in section 84.10(A)(4).
 - (e) If using Category 1 reclaimed water, restrict access to landscaped areas either by:

- i. Irrigating only during periods approved in the User Authorization so as to strictly minimize public contact with reclaimed water, or
- ii. Installing barriers to prevent public access to the Site, as approved in the User Authorization, restricting irrigation to times when the barriers are in place, and ceasing irrigation at least one hour prior to the barriers being totally or partially removed.

(7) Unrestricted Access Landscape Irrigation

- (a) Application rates or other measures shall be employed to minimize ponding or runoff from the area approved for application and use and prevent irrigation in excess of agronomic rate. Application rates must be controlled to ensure that associated pollutants do not pass through the root zone of the plants to be irrigated (e.g. automated irrigation schedule, rain shutoff devices, application at evapotranspiration rates adjusted for efficiency, daily inspections, or other means).
- (b) Flood and sheet irrigation are prohibited.
- (c) Ensure that direct and windblown spray and other means of human exposure from irrigation systems will be confined to the areas designated and approved in the User Authorization.
- (d) There must be signage that meets the requirements in section 84.10(A)(4).
- (e) No reclaimed water piping shall be extended to or supported from any residential structure and there shall be no accessible above ground outlets from the reclaimed water system at any residential structure. At least one exterior hose bib, supplied with potable water, shall be labeled and provided at each residential structure.

(8) Resident-Controlled Landscape Irrigation

- (a) Application rates or other measures shall be employed to minimize ponding or runoff from the area approved for application and use and prevent irrigation in excess of agronomic rate.
- (b) Ensure that direct and windblown spray and other means of human exposure from irrigation systems will be confined to the areas designated and approved in the User Authorization.
- (c) No reclaimed water piping shall be extended to or supported from any residential structure and there shall be no accessible above ground outlets from the reclaimed water system at any residential structure. At least one exterior hose bib, supplied with potable water, shall be labeled and provided at each residential structure.
- (d) Each residence must have at least one sign that indicates that irrigation is from non-potable water and that it is not suitable for drinking.
- (e) Unless a homeowners association or other entity acceptable to the Division (e.g. property management company) assumes responsibility, the Treater shall be responsible for all information required in the UASMP and shall act as the User's legal representative for purposes of certification pursuant to section 84.14.

- (9) Zoo Operations
 - (a) If Category 1 reclaimed water is used, public access to areas where reclaimed water is used must be restricted by time or by barrier.
- (10) Commercial Laundries
 - (a) Where there is potential for trained worker or public exposure to aerosols generated in the use, Users of Category 2 reclaimed water shall employ measures to prevent frequent exposure of trained workers and the public to aerosols by one of the following methods:
 - i. Implement onsite disinfection residual within the premise plumbing,
 - ii. Restricted access,
 - iii. A minimum setback distance of 100 feet between the nearest source of aerosol generations and areas where trained workers or the public are normally present,
 - iv. Physical barriers between aerosol sources and humans,
 - v. Personal protective equipment to prevent inhalation,
 - vi. Functionally equivalent measures approved by a qualified individual (e.g. a certified industrial hygienist), or
 - vii. Other measures approved by the Division and authorized in the User Authorization.
 - (b) There must be at least one sign that meets the minimum signage requirements in section 84.10(A)(4) at the entrance of the facility.
- (11) Automated Vehicle Washing and Manual Non-Public Vehicle Washing
 - (a) Applications rates or other measures shall be employed to minimize ponding or runoff from the area approved for application and use.
 - (b) Where there is potential for trained worker or public exposure to aerosols generated in the use, Users of Category 2 reclaimed water shall employ measures to prevent frequent exposure of trained workers and the public to aerosols by one of the following methods:
 - i. Restricted access,
 - ii. A minimum setback distance of 100 feet between the nearest source of aerosol generations and areas where trained workers or the public are normally present,
 - iii. Physical barriers between aerosol sources and humans,
 - iv. Personal protective equipment to prevent inhalation,
 - v. Functionally equivalent measures approved by a qualified individual (e.g. a certified industrial hygienist), or

- vi. Other measures approved by the Division and authorized in the User Authorization.
 - (c) There must be at least one sign that meets the minimum signage requirements in section 84.10(A)(4) located at each vehicle entry point.
- (12) Nonresidential Fire Protection and Residential Fire Protection
- (a) The User shall develop and implement a program, including notices in fire department newsletters and fire department preplans to educate the public and firefighters that reclaimed water is used for fire protection. An annual cross connection control inspection or test shall be made at each structure to which reclaimed water piping is extended for fire protection to ensure that no cross connection exists.
 - (b) Land Application discharges of reclaimed water from the fire suppression system during emergency firefighting activities that results in complete evapotranspiration is allowed and not subject to reporting requirements in 25-8-601(2), C.R.S.
- (13) Non-Food Crop Irrigation and Silviculture
- (a) Application rates or other measures shall be employed to minimize ponding or runoff from the area approved for application and use and prevent irrigation in excess of agronomic rate. Application rates must be controlled to ensure that associated pollutants do not pass through the root zone of the plants to be irrigated (e.g. automated irrigation schedule, rain shutoff devices, application at evapotranspiration rates adjusted for efficiency, daily inspections, or other means).
 - (b) Flood and sheet irrigation are prohibited.
 - (c) If using Category 1 reclaimed water, restrict access to landscaped areas either by:
 - i. Irrigating only during periods approved in the User Authorization so as to strictly minimize public contact with reclaimed water, or
 - ii. Installing barriers to prevent public access to the Site, as approved in the User Authorization, restricting irrigation to times when the barriers are in place, and ceasing irrigation at least one hour prior to the barriers being totally or partially removed.
 - (d) Ensure that direct and windblown spray and other means of human exposure from irrigation systems will be confined to the areas designated and approved in the User Authorization.
 - (e) There must be signage that meets the requirements in section 84.10(A)(4).

- (14) Commercial Food Crop Growing Operation
- (a) Application rates or other measures shall be employed to minimize ponding or runoff from the area approved for application and use and prevent irrigation in excess of agronomic rate. Application rates must be controlled to ensure that associated pollutants do not pass through the root zone of the plants to be irrigated (e.g. automated irrigation schedule, rain shutoff devices, application at evapotranspiration rates adjusted for efficiency, daily inspections, or other means).
 - (b) Flood and sheet irrigation are prohibited.
 - (c) Ensure that direct and windblown spray and other means of human exposure from irrigation systems will be confined to the areas designated and approved in the User Authorization.
 - (d) Commercially Processed Crops Sites must comply with any applicable requirements of the Rules Pertaining to the Administration and Enforcement of the Produce Safety Act, 8 CCR 1202-17. Compliance information with 8 CCR 1202-17 must be described in the Regulation 84 Annual Report provided by the Treater.
 - (e) Harvesting of crops in areas where irrigation is occurring and making the soil and/or plant wet is prohibited. Public access in areas where irrigation is occurring and making the soil and/or plants wet is prohibited. Irrigation schedules must be described in the UASMP.
 - (f) Irrigation of sprouts is prohibited where the sprout is the food crop, including but not limited to bean sprouts, alfalfa sprouts, and hemp clones.
 - (g) Comply with the educational requirements in section 84.10(A)(3) and:
 - i. Educate Users, cultivators and visitors of the hand washing and hand washing station requirements under the Rules Pertaining to the Administration and Enforcement of the Produce Safety Act, 8 CCR 1202-17.
 - ii. Each individual required to receive this education must affirm with a signature that the training was received. These training records must be available on Site or easily assessable for the Division and/or Treat for review.
 - (h) Comply with the minimum Signage Requirements in section 84.10(A)(4) and inform on either the same sign or different signs that crops are irrigated with reclaimed water. One of the following frequency and distance requirements must also be met:
 - i. For Sites under three acres, signs of at least 8.5 x 11" must be placed on portions of the perimeter within public view. For Sites over three acres but smaller than 25 acres, signs of at least 8.5 x 11" must be placed at no greater than 500 feet apart on any portions of the perimeter within public view. Distance and locations of signage must be described via map or description in the UASMP and User Authorization for the Site.

- ii. A sign of at least 2 x 1' must be placed at the main point of entry to the Site that also states that hands should be washed after coming into contact with irrigated crops or soils and/or irrigation of crops, and produce must be washed with potable water after harvest.
 - (i) A manual or display must be onsite at all times that describe what reclaimed water is, the Implementation Requirements required by the UASMP and the User Authorization, and irrigation practices that will prevent irrigation in excess of agronomic rate and minimize ponding or runoff of reclaimed water. This must be accessible to all visitors, trained workers and Users.
 - (j) Hand washing facilities as required in the Rules Pertaining to the Administration and Enforcement of the Produce Safety Act, 8 CCR 122-17 must be provided.
- (15) Non-Commercial Food Crop Growing Operation
 - (a) Application rates or other measures shall be employed to minimize ponding or runoff from the area approved for application and use and prevent irrigation in excess of agronomic rate. Application rates must be controlled to ensure that associated pollutants do not pass through the root zone of the plants to be irrigated (e.g. automated irrigation schedule, rain shutoff devices, application at evapotranspiration rates adjusted for efficiency, daily inspections, or other means).
 - (b) Ensure that direct and windblown spray and other means of human exposure from irrigation systems will be confined to the areas designated and approved in the User Authorization.
 - (c) Comply with the educational requirements in section 84.10(A)(3) and:
 - i. Educate Users and Cultivators that potable water must be used to wash hands and produce after harvesting produce, irrigating with reclaimed water and interacting with soils irrigated with reclaimed water. If hand washing with potable water is not available, hand sanitizer containing at least 60% alcohol must be used.
 - ii. Each individual required to receive this education must affirm with a signature that the training was received. These training records must be available on site or easily assessable for the Division and/or Treat tor review.
 - (d) Comply with the minimum Signage Requirements in section 84.10(A)(4) and inform on either the same sign or different signs that crops are irrigated with reclaimed water. One of the following frequency and distance requirements must also be met:
 - i. For Sites under three acres, signs of at least 8.5 x 11" must be placed on portions of the perimeter within public view. For Sites over three acres but smaller than 25 acres, signs of at least 8.5 x 11" must be placed at no greater than 500 feet apart on any portions of the perimeter within public view. Distance and locations of signage must be described via map or description in the UASMP and User Authorization for the Site.

- ii. A sign of at least 2 x 1' must be placed at the main point of entry to the Site that also states that hands should be washed with potable water after coming into contact with irrigated crops or soils and/or irrigation of crops, and produce must be washed with potable water after harvest.
- (e) Hose bibs that supply reclaimed water must be locked (with a non-duplicative key for access) and/or only accessible by a key code that may not be shared with any individual who has not received the Treater's education and training program in section 84.6(F)(4) and additional educational requirements in section 84.10(A)(3) and section 84.10(B)(15)(c).
- (f) Children in eighth grade or younger must be supervised by an adult at the garden. Minors who are in ninth grade and older who have not been educated per the Treater's education and training program in section 84.6(F)(4) and section 84.10(B)(15)(c) must also be supervised by an adult. Supervising adults must be educated per the Treater's education and training program in section 84.6(F)(4).
 - i. For Sites that use hoses for reclaimed water irrigation, one additional supervising adult must be present with children in eighth grade and younger to oversee the appropriate use for each active hose/hose spigot beyond the first. If a Site is three acres or more, and the garden is divided into different sections that are clearly demarcated, children in eighth grade or younger can be on site if they are in a section where the water delivery mechanism in that section is disabled and the child is supervised.
 - ii. This condition will not apply to a Site upon findings that monitoring for one irrigation season demonstrates that reclaimed water on-site meets the Category 3 water quality standards (no E. coli detected in at least 75% of samples in a calendar month and 126 cfu/100 ml single sample maximum). Monitoring shall occur at least every other month during the irrigation season. If the Division omits this condition from the User Authorization, the User must continue to monitor E. coli levels at the Site at least every other month during the irrigation season. Results must be submitted to the division for approval before this condition is not applicable to the User Authorization. If E. coli levels are above 126 cfu/100 ml at the Site, E. coli is detected in more than 25% of samples in a calendar month, the User fails to continue monitoring, or the Division or the Treater have found that the User is not consistently complying with this Regulation and all applicable requirements in the UASMP and User Authorization, the Division may require compliance with this condition through an amended User Authorization.
- (g) A manual or display must be onsite at all times that describe what reclaimed water is, the Implementation Requirements required by the UASMP and the User Authorization, and irrigation practices that will prevent irrigation in excess of agronomic rate and minimize ponding or runoff of reclaimed water. This must be accessible to all Visitors, Trained Workers and Users.
- (h) Irrigation of sprouts is prohibited where the sprout is the food crop, including but not limited to bean sprouts, alfalfa sprouts, and hemp clones.

- (i) Users shall allow the Division or its authorized representative to conduct inspection of the Site at a reasonable time and in a reasonable manner, without prior notification, to assess compliance with this regulation and the User Authorization. This includes allowing access to area(s) where irrigation is occurring and allowing the Division or its authorized representative to interview any person(s) present at the Site. Pursuant to CRS 25-8-306, the Division will provide the User with the credentials for any inspector that may conduct such inspections at a date prior to conducting any inspections and inspectors will present proper credentials to any User present at the Site who requests them at the time of inspection.
- (j) A Site Manager is required. Responsibilities and authority for Site Managers are:
 - i. Ensure an accurate UASMP and User Authorization are onsite or easily accessible, and when required per section 84.9(E)(5), submit UASMP modifications to amend the User Authorization to the Treater and Division.
 - ii. Maintain accurate records of Cultivators, Trained Workers and other individuals that use reclaimed water on the authorized Site that have been educated per 84.10(B)(15)(c).
 - iii. Ensure all Cultivators, Trained Workers and other individuals that use reclaimed water on the authorized Site are educated about reclaimed water per the requirements in sections 84.6(F)(4) and 84.10(A)(3) and 84.10(B)(15)(c).
 - iv. Ensure all Cultivators, Trained Workers and other individuals that use reclaimed water on the authorized Site are in compliance with the applicable Implementation Requirements in section 84.10 and the requirements in the UASMP and User Authorization.
 - v. Implement appropriate procedures and actions to minimize the occurrence of violations, and obtain compliance with the requirements of the UASMP and User Authorization. Implement sanctions for recalcitrant and repetitive violations that includes but is not limited to denial of water use or banning individuals from the Site.
 - vi. Inspect Site prior to the first of reclaimed water at the Site each calendar year.
 - vii. Routine inspections are requirement every 14 days and at least 5 days from the previous inspection. Inspections must include and document that all Implementation Requirements and conditions in the UASMP and User Authorization are being met and available for the Division and Treater to review.
 - viii. Ensure compliance with 84.10(B)(15)(m).
- (k) Irrigation equipment that is used for reclaimed water shall not be hooked up to potable water spigots or hose bibs.

- (l) Users may need to provide any additional information necessary in the UASMP to identify how they will comply with the Implementation Requirements in 84.10 and to prevent irrigation in excess of the agronomic rate and to minimize ponding or runoff of reclaimed water. BMPs include any method used to protect public health and the environment. BMPs include, but are not limited to, schedules of activities, prohibitions of practices, maintenance procedures, and other management practices.
 - (m) Potable water supply or hand sanitizer containing at least 60% alcohol must be readily available for Users, Visitors and Trained Workers to sanitize hands after any interaction with landscapes or agricultural crops that have been irrigated with reclaimed water. If the Site is not located within a reasonable distance from lavatories/sinks, hand sanitizer or a portable hand washing station may be used and:
 - i. Unused water from portable hand washing stations must be disposed of in an area whereby it will not come into contact with crops, soils or infiltration into soils near crops. The disposal must not create an unpermitted point source discharge to a water of the state.
- (16) Resident-Controlled Food Crop Irrigation
- (a) Application rates or other measures shall be employed to minimize ponding or runoff from the area approved for application and use and prevent irrigation in excess of agronomic rate. Application rates must be controlled to ensure that associated pollutants do not pass through the root zone of the plants to be irrigated (e.g. automated irrigation schedule, rain shutoff devices, application at evapotranspiration rates adjusted for efficiency, daily inspections, or other means).
 - (b) Ensure that direct and windblown spray and other means of human exposure from irrigation systems will be confined to the areas designated and approved in the User Authorization.
 - (c) All property owners and renters must be provided with an educational manual and verbally educated by the Management User that complies with the minimum requirements set forth in section 84.10(A)(3) and the minimum requirements set forth in the Treater's education and training program in section 84.6(F)(4). Additionally, the Management User shall:
 - i. Educate Users and cultivators that produce and hand washing with potable water is required after harvesting produce, irrigating with reclaimed water and interacting with soils irrigated with reclaimed water.
 - ii. Each individual required to receive this education must affirm with a signature that the training was received. These training records must be available on site or easily assessable for the Division and/or Treat or review.
 - iii. If the property is rented or sold at a later date, the new occupants must also be provided with the verbal education and manual, and provide signature that education was received. The Management User must retain the signatures onsite.

- (d) A manual or display must be onsite at all times that describe what reclaimed water is, the Implementation Requirements required by the UASMP and the User Authorization, and irrigation practices that will prevent irrigation in excess of agronomic rate and minimize ponding or runoff of reclaimed water. This must be accessible to all visitors, trained workers and Users.
- (e) Irrigation of sprouts is prohibited where the sprout is the food crop, including but not limited to bean sprouts, alfalfa sprouts, and hemp clones.
- (f) If the Site is irrigated with an automated irrigation system, the food crops must be irrigated on a separate irrigation zone than the non-food crop landscape.
- (g) A Management User is required. Responsibilities and authority for Management Users are:
 - i. Ensure each homebuyer or renter that uses reclaimed water on the authorized Site are educated about reclaimed water per the education and training requirements in sections 84.6(F)(4), 84.10(A)(3) and 84.10(B)(16)(c), that the educational manual described in section 84.10(B)(16)(c) is provided prior to residents occupying the property, and a signature is obtained by the homeowner or renter that proves acknowledgement of understanding of the risks associated with using reclaimed water. Copies of signed documents must be kept onsite by the Management User.
 - ii. Maintain up to date maps/records of locations, number and acreage of Sites where reclaimed water is used to irrigate edible crops and landscapes, and update Treater on a biannual basis.
 - iii. Calculate the agronomic rate analysis for each Site to ensure agronomic rate will not be exceeded.
 - iv. Monitor water usage in gallons at minimum on a monthly basis to ensure agronomic rate is not exceeded. The UASMP shall indicate whether the monitoring responsibility belongs to the Treater or the Management User.
 - v. Implement appropriate procedures and actions to obtain compliance with, the requirements of the UASMP and User Authorization. Implement sanctions for recalcitrant and repetitive violations that includes but is not limited to denial of water use.
 - vi. The division will not issue a User Authorization if the agronomic rate analysis demonstrates that given the nitrogen concentrations in the reclaimed water, that there is a reasonable potential that with the quality of irrigation water needed, the agronomic rate will be exceeded.
 - vii. During inspections by the Division, violations will be issued to the Management User and/or Legally Responsible Individual or associated entity listed in the User Authorization.

- viii. Management Users must, at minimum, conduct 10% representative garden Site visits annually with Users of reclaimed water. Inspections must include and document that all Implementation Requirements and conditions in the UASMP and User Authorization are being met. Inspection results must be and available for the Division and Treater to review.
 - ix. Report violations to the Treater and Division and keep violations documented with the location information.
 - (h) Each residence must have at least one sign that indicates that irrigation is from non-potable water, it is not suitable for drinking and that food crops should be washed with potable water.
 - (i) Only drip, subsurface drip, button drip or other low to the ground irrigation systems are allowed and must cover a small distribution area.
 - (j) A potable water supply spigot must be available on the exterior of the residence.
- (17) Edible and Non-Edible Hemp Irrigation
- (a) Application rates or other measures shall be employed to minimize ponding or runoff from the area approved for application and use and prevent irrigation in excess of agronomic rate. Application rates must be controlled to ensure that associated pollutants do not pass through the root zone of the plants to be irrigated (e.g. automated irrigation schedule, rain shutoff devices, application at evapotranspiration rates adjusted for efficiency, daily inspections, or other means).
 - (b) Comply with the educational requirements in section 84.10(A)(3) and:
 - i. Educate Users and cultivators that produce and hand washing with potable water is required after harvesting produce, irrigating with reclaimed water and interacting with soils irrigated with reclaimed water. If hand washing with potable water is not available, hand sanitizer containing at least 60% alcohol must be used.
 - ii. Each individual required to receive this education must affirm with a signature that the training was received. These training records must be available on site or easily assessable for the Division and/or Treater for review.
 - (c) Comply with the minimum Signage Requirements in section 84.10(A)(4) and inform on either the same sign or different signs that crops are irrigated with reclaimed water. One of the following frequency and distance requirements must also be met:
 - i. For Sites under three acres, signs of at least 8.5 x 11" must be placed on portions of the perimeter within public view. For Sites over three acres but smaller than 25 acres, signs of at least 8.5 x 11" must be placed at no greater than 500 feet apart on any portions of the perimeter within public view. Distance and locations of signage must be described via map or description in the UASMP and the User Authorization for the Site.

- ii. A sign of at least 2 x 1' must be placed at the main point of entry to the Site that also states that hands should be washed with potable water after coming into contact with irrigated crops or soils and/or irrigation of crops, and produce must be washed with potable water after harvest.
- (d) A manual or display must be onsite at all times that describe what reclaimed water is, the Implementation Requirements required by the UASMP and the User Authorization, and irrigation practices that will prevent irrigation in excess of agronomic rate and minimize ponding or runoff of reclaimed water. This must be accessible to all visitors, trained workers and Users.
- (e) Irrigation of sprouts is prohibited where the sprout is the food crop, including but not limited to bean sprouts, alfalfa sprouts, and hemp clones (**EXCEPTION: NON-EDIBLE HEMP IRRIGATION**).
- (f) Harvesting of crops in areas where irrigation is occurring and making the soil and/or plant wet is prohibited. Public access in areas where irrigation is occurring and making the soil and/or plants wet is prohibited.
- (g) Flood and sheet irrigation are prohibited.
- (h) Ensure that direct and windblown spray and other means of human exposure from irrigation systems will be confined to the areas designated and approved in the User Authorization.
- (i) A Site Manager is required. Responsibilities and authority for Site Managers are:
 - i. Ensure an accurate UASMP and User Authorization are onsite or easily accessible, and when required per section 84.9(E)(5), submit UASMP modifications to amend the User Authorization to the Treater and Division.
 - ii. Maintain accurate records of Cultivators, Trained Workers and other individuals that use reclaimed water on the authorized Site who have been educated per 84.10(B)(17)(b).
 - iii. Ensure all Cultivators, Trained Workers, Visitors and other individuals that use reclaimed water on the authorized Site are educated about reclaimed water per the education and training requirements in sections 84.6(F)(4) and 84.10(A)(3) and 84.10(B)(17)(b).
 - iv. Ensure all Cultivators, Trained Workers and other individuals that use reclaimed water on the authorized Site are in compliance with the applicable Implementation Requirements in section 84.10 and the requirements in the UASMP and User Authorization.
 - v. Implement appropriate procedures and actions to minimize the occurrence of violations, and obtain compliance with the requirements of the UASMP and User Authorization. Implement sanctions for recalcitrant and repetitive violations that includes but is not limited to denial of water use or banning individuals from the Site.
 - vi. Inspect Site prior to the first of reclaimed water at the Site each calendar year.

- vii. Routine inspections of at least one per month are required during the irrigation season.
 - viii. Report violations to the Treater and the Division and keep violations documented with the location information.
 - (j) Potable water supply or hand sanitizer containing at least 60% alcohol must be readily available for Users, Visitors and Trained Workers to sanitize hands after any interaction with landscapes or agricultural crops that have been irrigated with reclaimed water. If the Site is not located within a reasonable distance from lavatories/sinks, hand sanitizer or a portable hand washing station may be used and:
 - i. Unused water from portable hand washing stations must be disposed of in an area whereby it will not come into contact with crops, soils or infiltration into soils near crops. The disposal must not create an unpermitted point source discharge to a water of the state.
 - ii. The Site Manager (for Non-Commercially Processed Food Crop Growing Operations) is responsible for ensuring that the portable hand washing station contains potable water.
 - (k) If using Category 1 reclaimed water, restrict access to landscaped areas either by:
 - i. Irrigating only during periods approved in the User Authorization so as to strictly minimize public contact with reclaimed water, or
 - ii. Installing barriers to prevent public access to the Site, as approved in the User Authorization, restricting irrigation to times when the barriers are in place, and ceasing irrigation at least one hour prior to the barriers being totally or partially removed.
- (18) Toilet and Urinal Flushing
 - (a) Reclaimed water may be used for toilet and urinal flushing provided that the User adopts and follows best management practices (BMPs) to minimize growth of and trained worker exposure to Legionella and other premise plumbing opportunistic pathogens. The User or the Treater (person) must be responsible for monitoring disinfection at the point of compliance and operation and maintenance of the chlorine boosting system or the alternative disinfection method. This person must be identified in the UASMP. BMPs shall be specified in a site-specific operation and maintenance plan as described in section 84.10(B)(18)(f), and shall include at least one of the following:

- i. Maintenance of a minimum 0.2 mg/L of free chlorine disinfectant or 0.5 mg/L of monochloramine residual if ammonia is present in premise plumbing. The disinfection residual shall be measured at a location at a distance of no greater than 50 feet from the location of use at the distal end or a location that represents the oldest water age within the reclaimed water premise plumbing system. This may require chlorine "boosting" at the point that reclaimed water enters a structure. The monitoring frequency will be no less frequent than once (grab samples) per week. If the disinfectant residual is not in compliance with this requirement, the system must perform operations and maintenance and return all premise plumbing to a minimum 0.2 mg/L disinfection residual for free chlorine or 0.5 mg/L disinfection residual for monochloramine within 24 hours. Exact monitoring locations, and other compliance terms, will be identified in the site specific operation and maintenance plan submitted as part of the UASMP. The system must maintain records of all sampling, locations, and corrective operations for review by the Treater or Division upon request.
 - ii. An alternative disinfection method as approved by the Division with equivalent protection against premise plumbing pathogens as set forth in section 84.10(B)(18)(a)(i) above. The effectiveness of an alternative disinfection method may be verified by monitoring. The monitoring plan and any requirements for implementation of any Division approved alternative disinfection method must be included in the UASMP and User Authorization.
 - iii. Where reclaimed water is used for indoor non-potable uses within a building where plumbing fixtures are accessible by the general public, a monitoring location for disinfection residual at a distance no greater than 50 feet from the location of use at the distal end or a location that represents the oldest water age within the reclaimed water premise plumbing system may be used as an alternate point of compliance for disinfection residual.
- (b) To minimize the risk of unintended cross connections, plumbing modifications and repairs shall only be conducted by licensed plumbers.
 - (c) Signage shall indicate that all plumbing modifications can only be done by authorized personnel.
 - (d) Toilet and urinal installations must be conducted in accordance with article 155 of title 12 (concerning plumbers) and rules promulgated pursuant to that article.
 - (e) Reclaimed water shall not be used if it is stored in an outdoor storage facility exposed to the open atmosphere after treatment.
 - (f) The User must include an operations and maintenance plan to be kept on Site that reflects current conditions.
 - (g) Users receiving reclaimed water for use within an occupied premise, must include a backup potable water connection capable of supplying potable water to fixtures for flushing via an air gap should the reclaimed water treatment system fail or the reclaimed water is found to be non-compliant or insufficient in volume.

- (h) A Certified Cross-Connection Control Technician shall complete a survey prior to initial operation of the system to detect uncontrolled cross connections. Inspections or tests must be conducted at intervals thereafter as mandated in the User Authorization. The User must maintain a current diagram of the structure's potable, reclaimed water, and wastewater plumbing.

(C) Reclaimed Water Land Application Discharges

- (1) Reclaimed water shall not be used in a manner that results in a land application discharge, unless
 - (a) The land application discharge is authorized by a CDPS permit;
 - (b) The land application discharge is exempted from CDPS permitting in accordance with Regulation 61.14(1)(b); or
 - (c) The land application discharge is occurring under the provisions of, and in compliance with, a User or Treater Authorization issued pursuant to this Regulation 84 for a use identified in Table B, below, and therefore exempted from CDPS discharge permitting in accordance with Regulation 61.14(1)(a)(v). Table B identifies authorized uses of reclaimed water that have land application allowances and which are required to minimize and/or strictly prohibit the discharge of reclaimed water to waters of the state.

Table B: Authorized Reclaimed Water Uses and Land Application Allowances and Prohibitions

Land Application Status	Authorized Uses	Regulatory Reference(s)
Land application allowed when the design and operation of the system will result in complete evapotranspiration of reclaimed water	Landscape Irrigation, Agricultural Irrigation, and Fire Protection	Regulation 61.14(1)(b)
Land application allowed at agronomic rate (as defined in Regulation 84)	Landscape Irrigation and Agricultural Irrigation Uses	Regulation 84.10(B)(6-8) and 84.10(B)(13-17)
All land application prohibited	Industrial, Commercial and Toilet and Urinal Flushing	Regulation 84.10(B)(1-5), 84.10(B)(9-11), and 84.10(B)(18)

84.11 MONITORING, RECORD KEEPING AND REPORTING

- (A) Treaters and Users operating pursuant to a Treater or User Authorization shall be subject to such monitoring, record keeping, and reporting requirements as may be reasonably required by the Division to ensure compliance with the requirements of this regulation, and the Treater or User Authorization, including, but not limited to the following:
- (1) For Treaters: the quality of reclaimed water produced and delivered at the point(s) of compliance, inspections of a representative number and type of User sites to determine User compliance, and self-certifications in section 84.9(A)(8) submitted to the Treater by Users.
 - (2) For each User, the total volume of reclaimed water used per year. For Landscape Irrigation Users and Agricultural Irrigation Users, each location with the associated acreage where reclaimed water was applied.
 - (3) For each User using Category 1 reclaimed water, confirmation that reclaimed water was used only during authorized use times (if applicable).
- (B) Treaters shall provide an annual report to the Division for the previous year, by March 31st, that includes the following:
- (1) Information demonstrating the Treater's compliance with the reclaimed water standards, including applicable treatment requirements described in section 84.7, 84.8, 84.9 and for localized systems, 84.16 of this regulation.
 - (2) Confirmation that the Treater conducted inspections pursuant to section 84.11(A)(1) above.
 - (3) Violations of this regulation by Users pursuant to section 84.11(C)(1) and (2), below.
 - (4) A certification statement by the Treater as per section 84.14 below regarding the information provided by the treater in subsections (1) and (2) above.
 - (5) Information supplied by Users to the Treater demonstrating compliance with the conditions applicable to each specific User included in the notice of authorization.
 - (6) Certification statements from each User as per section 84.14 below regarding the information provided in subsection (5) above.
- (C) The Treater and Users shall report any violations as follows:
- (1) Violations of this regulation and/or Authorizations at their respective facilities in writing to the Division, within thirty days of becoming aware of the violation. Where the Treater finds violations by a User, the thirty day period for reporting is waived for a period of up to thirty additional days, if the Treater is working with the User to resolve the violation. If the violation is resolved, no separate notice to the Division is required except that the violation is to be reported in the treater's annual report. If the violation is continuing after a total of sixty days from the time the Treater became aware of the violation, the Treater shall report the violation to the Division within five working days. Nothing in this section precludes a User from reporting violations by a Treater to the Division.

- (2) For more serious violations (including non-permitted discharges to surface waters, uncontrolled cross-connections, exceedances of the reclaimed water standards for E. coli, turbidity, secondary standards, continuous proper operations and maintenance of treatment systems while producing reclaimed water, the Treater and/or User Authorization conditions of the site location and design approvals, or other violations posing an immediate threat to public health or the environment): orally to the Division within 24 hours of becoming aware of the violation, followed up by a written report within five working days. The written report shall contain a description of the noncompliance, including exact dates and times; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

84.12 VARIANCES

The Division may grant a variance from any provision of this regulation as set forth below:

- (A) With respect to the E.coli standards in section 84.7, a variance may only be granted from the "235/100 ml single sample maximum" standard. The Division may grant this variance when the treater or the user demonstrates that the benefits to public health or the environment that will be created by compliance with the E. coli standards in section 84.7 do not bear a reasonable relationship to the costs required to achieve compliance.
- (B) With respect to a use that is not listed in Table A of section 84.10, the Division may grant a variance in a Treater Authorization (and subsequent User Authorization(s)) to authorize the use and identify any necessary requirements when the following requirements are met:
 - (1) The division finds that:
 - (a) Another state or federal governing agency provides oversight and water quality regulations that are equivalent to or surpass the public and environmental health protections that are or would be included in Regulation 84; OR
 - (b) The Division has determined that the variance results in no additional risk to public health or the environment and existing reclaimed water category(ies), Implementation Requirements and, if needed, new site-specific Implementation Requirements can be used to protect public health and the environment.
 - (2) Public notice of the draft variance is provided on the division's web page and the public has the opportunity to provide comment for at least 30 days.
 - (3) If, after considering public comments, the division still finds that the variance meets the criteria in 84.12(B)(b), the variance is included on the next Commission agenda following the close of public comments.
 - (4) Prior to that Commission meeting, the Commission has been provided with the variance request, the division's findings on the variance request, and any public comments.
 - (5) At that meeting, the Commission takes no action on the variance or, after holding an adjudicatory hearing pursuant to 5 CCR 1002-21, affirms the issuance of the variance or affirms a modified variance.
- (C) With respect to all other provisions of this regulation, the Division may grant a variance in a particular case where the Treater or the User demonstrates that the benefits to public health or the environment that will be created by compliance with the subject provision do not bear a reasonable relationship to the costs required to achieve compliance.

84.13 ENFORCEMENT

Violations of this regulation by Treater and Users shall be subject to enforcement by the Division pursuant to Part 6 of the CWQCA. A Treater shall not be subject to enforcement based solely on a violation by a User. A Treater is required by this regulation to develop and implement a reuse system management plan that meets the requirements of section 84.6(A)(6) to ensure User compliance with this regulation, and may be subject to enforcement for violations associated with failure to implement this program based on evidence that may include evidence of violations by User. A User shall not be subject to enforcement for a violation by a Treater; a Treater shall be solely responsible for its compliance with the terms and conditions imposed upon treaters. However, if a User was aware of the violation and did not report it as required in subsection 84.11(C), the User may be subject to an enforcement action for failure to report the violation.

84.14 CERTIFICATION

Persons who are required to make submittals pursuant to subsections 84.6(A)(7) and 84.11(B)(6) of this regulation, shall include the following certification statement:

"I certify, under penalty of law, that the information I am providing in this submittal is true, accurate, and correct. This determination has been made under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

84.15 PROPOSALS TO AUTHORIZE USES

- (A) The Commission may consider proposals to authorize additional uses that are not listed in Table A of section 84.10 and are not eligible for a variance per section 84.12(B) on a triennial basis using the following factors:
 - (1) The approximate quantity of potable water that will be saved by implementing the proposed use;
 - (2) Whether, when implemented with the accompanying Implementation Requirements, the use will be protective of public health and the environment;
 - (3) The resources needed by treaters and the division to provide a reasonable assurance of compliance with required Implementation Requirements and other Regulation 84 requirements.
- (B) The Commission also retains the discretion to consider proposals to authorize additional uses more frequently when potential savings to potable water supplies are so great that action is needed more quickly.

84.16 ADDITIONAL REQUIREMENTS FOR LOCALIZED RECLAIMED WATER TREATMENT SYSTEMS

- (A) Reclaimed water treated by localized reclaimed water treatment systems must comply with the standards and requirements in this regulation (sections 84.1 through 84.15) and in this section 84.16.

- (B) Field Verification and Commissioning Report and Inspection. For localized reclaimed water treatment systems, prior to supplying reclaimed water for use, the Treater must verify that the system is operational and meets reliability requirements of the log removal targets in section 84.16(D)(1) below. Following completion of field verification and commissioning, the Treater shall provide the Division a field verification and commissioning report and an operations and monitoring plan. The field verification and commissioning report will confirm that the treatment system has been installed and is operating in accordance with the approved design criteria in section 84.16(D)(1) below. The operations and monitoring plan will define the frequency and locations for monitoring, data storage, and reporting. The Division may conduct an inspection of the localized reclaimed water treatment system to confirm that the unit treatment processes have been installed in conformance with the approved design and are in operation in accordance with operations and monitoring plan.
- (C) Division Review and Issuance of Treater Authorization. The Division will review the field verification and commissioning report and operations and monitoring plan for localized reclaimed water treatment systems in addition to the Treater Application and conduct the requirements as described in 84.6(B).
- (D) The Treater must properly operate and maintain all required treatment systems when producing reclaimed water in accordance with this regulation, the Treater Authorization and the site location and design approvals. In addition to the factors to be considered and approved by the Division under Regulation #22, localized reclaimed water treatment systems are subject to the following additional design requirements for treatment.
- (1) The Treater must properly operate a multi-barrier treatment approach using filtration and disinfection following secondary treatment while producing reclaimed water that reliably achieves all of the logarithmic ("log") reduction targets for pathogens set forth in Table B below. If a Treater conducts its own microbial risk assessment, the Treater may request approval from the Division to use alternative log reduction targets based upon the Treater's microbial risk assessment.
- (a) Reclaimed water produced from localized systems for Category 1 uses must meet the design requirements based on a microbial risk assessment using a risk target no less stringent than 10-2 infections per person per year only for Enteric Viruses as set forth in Table B below.
- (b) Reclaimed water produced from localized systems for Category 2 uses must meet the design requirements based on a microbial risk assessment using a risk target no less stringent than 10-2 infections per person per year as set forth in Table B below.
- (c) Reclaimed water produced from localized systems for Category 3 uses must meet the design requirements based on a microbial risk assessment using a risk target no less stringent than 10-4 infections per person per year as set forth in Table B below.

Table C: Localized System Log Removal Targets for Treatment Design

	Enteric Viruses	Parasitic Protozoa	Enteric Bacteria
Log ₁₀ Reduction Target (10 ⁻²) Category 1	6.0	-	-
Log ₁₀ Reduction Target (10 ⁻²) Category 2	6.0	5.0	4.0
Log ₁₀ Reduction Target (10 ⁻⁴) Category 3	8.5	7.0	6.0

- (2) The Division will develop policy defining credits for the log reduction of pathogens through various treatment processes.
 - (3) The localized system design requirements will be based on the assumption that the wastewater does not receive meaningful inputs from industrial or other diluting sources.
- (E) Localized System Monitoring Requirements:
- (1) Reclaimed water produced from localized systems must meet the standards for the category of reclaimed water in section 84.7 for the approved use. Compliance with the standards in section 84.7 shall be verified by the monitoring requirements in section 84.16(C)(2) and (3) below.
 - (2) Localized reclaimed water treatment systems must be continuously monitored for appropriate process control parameters to demonstrate that systems designed to comply with pathogenic microorganism control are functioning properly. The choice of the type of continuous monitoring technologies to be utilized will be tailored for an individual system and will be included in an operations and monitoring plan. Examples of acceptable forms of continuous monitoring for localized system process control are identified in Table C below:

Table D: Acceptable Surrogate Parameters for Localized Systems

Surrogate Parameter	Surrogate Monitoring Point	Purpose
Chlorine residual	Post-chlorination at a representative location for treatment	Confirm control of opportunistic pathogens
Continuous turbidity or particle size distribution	Post-filtration at a representative location for treatment	Confirm operation of filtration system; can be an indicator of pathogen breakthrough
Pressure decay test ¹	Membrane filtration unit	Measures membrane integrity
Electrical conductivity or tracer spike test; total organic carbon or UV absorbance (254 nanometers)	Reverse osmosis or nanofiltration unit	Can be related to pathogen breakthrough
Continuous color, ultraviolet light absorbance (UVA) or transmittance (UVT), and/or pH	Prior to disinfection or ozonation	Can indicate conditions that inhibit pathogen removal in disinfection or ozonation steps
Residual ozone, or oxidation-reduction potential	Ozonated water	Can be correlated to pathogen removal
Continuous ultraviolet (UV) intensity	UV-treated water	Confirm sufficient dose of UV for pathogen inactivation

¹This test can be used and monitored on a frequency to be determined by the Treater and approved by the Division.

- (3) The Division shall adopt a policy identifying other acceptable monitoring technologies for localized system treatment processes and means to approve additional monitoring techniques. The operations and monitoring plan shall include a tailored quality assurance plan specific to the continuous monitoring equipment in place. The quality assurance plan may include analysis of periodic grab samples for additional quality assurance of data collected via continuous monitoring, with parameters measured being consistent with those measured via continuous monitoring.
- (F) The Treater must return any recycled spent filter backwash water, thickener supernatant, or liquids from the dewatering process to a location within the treatment process that is before the filtration technology or an alternative Department-approved location.
 - (1) For conventional or direct filtration, the location of return must be prior to the coagulant feed location.
 - (2) For all other filtration technologies, the location of return must be prior to the filtration process and approved by the Division.
- (G) Localized reclaimed water treatment systems shall include a flow meter on the localized reclaimed water treatment system and a flow meter on the potable make-up water pipeline to the distribution system.
- (H) Localized reclaimed water treatment systems must be equipped with features that result in a controlled and non-hazardous automatic shutdown of the process in the event of a malfunction. Localized reclaimed water treatment systems must maintain overflow connections to an approved and permitted domestic wastewater treatment works to allow for disposal of off-specification treated reclaimed water or to allow disposal of untreated wastewater during maintenance of the treatment system. Overflow connections will include an approved cross connection control device or method.
- (I) NOAs for use of reclaimed water from localized systems may include requirements for limitations on contributions from non-domestic sources as necessary to prevent pass through, interference, or impacts on public health or the environment from those sources.
- (J) Additional Implementation Requirements for Localized Systems
 - (1) Protocol to switch to potable water and redirect reclaimed water to the sanitary sewer system no later than 12 hours after receipt of the results of any water quality test sample that does not meet the water quality requirements of the Treater Authorization or indication of a process malfunction based on continuous monitoring. Systems required to redirect reclaimed water to the sanitary sewer may resume normal operation after the Division receives a letter explaining why the performance was compromised and what actions were taken to prevent it from reoccurring, and three (3) consecutive days of data showing compliance, and the Division issues an approval to resume operations.
 - (2) An affidavit by the User attesting to the employment of a certified operator or a service contract with a certified operator, who meets the requirements of Regulation 100.
 - (3) An enforceable legal agreement defining the roles and responsibilities of the User and Treater.
 - (4) If required, the User shall identify the percentage contributions from each wastewater input to the localized system and the location of the input, and any limitations on contributions from non-domestic sources as necessary to prevent pass through, interference, or impacts on public health or the environment from those sources.

84.17 - 84.20 Reserved

84.21 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE

The provisions of sections 25-8-205(1) and 25-8-308(1)(h) C.R.S., provide the specific statutory authority for the Reclaimed Domestic Wastewater Reuse Control Regulation adopted by the Commission. The Commission has also adopted, in compliance with section 24-4-203(4), C.R.S., the following statement of basis, specific statutory authority, and purpose.

BASIS AND PURPOSE

A. Background

In March of 1998 the Commission requested that a subcommittee of the Water Quality Forum be convened to consider potential statutory changes to the Colorado Water Quality Control Act ("Act") to address reuse of reclaimed domestic wastewater for landscape irrigation. The joint reuse committee of the American Waterworks Association and the Water Environment Association ("AWWA/WEA") suggested this approach to the Commission in a February 1998 presentation.

In the fall of 1999 the Forum subcommittee made a recommendation that the Colorado Water Quality Control Act be amended to provide the Commission with the authority to promulgate control regulations for the oversight of reuse and to provide the Division with the authority to implement a reuse program. In March of 2000 the general assembly adopted changes to the Act consistent with the subcommittee's recommendations and those changes became effective on July 1, 2000. The subcommittee had been concurrently working on a proposed control regulation that is patterned after the Commission's Biosolids Regulation.

B. Regulatory System Overview

It is the intent of the Commission that this regulation further promote reuse of reclaimed domestic wastewater by providing a comprehensive framework which, when followed, will assure responsible management of operations and a product of a quality compatible with the state's goals of protecting the public health and the environment. The Commission concludes that the provisions of this regulation are economically reasonable considering the economic, environmental and public health costs and impacts of the program.

The Commission, in adopting these regulatory provisions, has limited the scope of the regulation to reuse of reclaimed domestic wastewater for landscape irrigation. The statutory changes do not, on their face, appear to limit the adoption of control regulations to this type of reuse. However, the Commission finds that it is appropriate to limit the scope of the regulation to this aspect of reuse based on the AWWA/WEA recommendation that landscape irrigation should be addressed first as the vast majority of reclaimed domestic wastewater in Colorado is used for this purpose. The Commission will consider regulatory proposals for other types of reuse, such as industrial and agricultural, in future rulemaking hearings where recommendations from a broad spectrum of interests are brought forward. This regulation is not intended for single family residential areas, unless the landscape irrigation areas are commonly owned or otherwise subject to reasonable controls by a neighborhood association to assure application is consistent with the "Conditions for Application" requirements.

The Commission has adopted provisions for the application of reclaimed domestic wastewater at “agronomic rates” with the intent that, once conforming changes are made to the Colorado Discharge Permit System (“CDPS”) Regulations, reuse of reclaimed domestic wastewater in accordance with the provisions of this regulation will not be required to obtain a CDPS ground water discharge permit. The Commission does not intend that these regulations be used to limit flexibility to apply additional nutrients to landscaping being irrigated with reclaimed domestic wastewater. The Commission does expect that treaters will, as part of their overall program, inform applicators of the nutrient content of the reclaimed domestic wastewater.

The Commission has found that the use of an approach similar to that defined in the Biosolids Regulation will provide the appropriate level of oversight of reuse operations yet will not unduly burden the entities that are treating and applying reclaimed domestic wastewater to landscape.

The Commission expects that the amount of available information both on the health effects of reclaimed domestic wastewater and on the monitoring of pathogens will increase over the next several years. As a result, the Commission anticipates that the standards may be adjusted as new information becomes available. In the triennial review of this regulation, the Commission will consider any new information that is brought to it concerning pathogenic microorganisms and indicators of the presence or absence of such microorganisms in reclaimed domestic wastewater.

C. Letters of Intent

In order to facilitate the use of reclaimed domestic wastewater the “treater” is required to submit a Letter of Intent for each “applicator” to which it will be supplying reclaimed domestic wastewater. This will add a marginal burden to the treater, the entity that is most knowledgeable of the operational and regulatory requirements of the regulation, and will facilitate the responsible use of reclaimed domestic wastewater by entities that are interested in obtaining a viable product. At the same time, the Commission recognizes that the applicator must take responsibility for the proper use of reclaimed domestic wastewater by requiring the applicator to acknowledge receipt of the regulation and their intent to comply therewith. The treater must submit a description of an educational program that, in combination with a proposed plan to oversee the applicator’s operation, will provide reasonable assurance of compliance.

The Commission has allowed existing treatment and land application facilities until December 31, 2001, to submit Letters of Intent as they will continue to be regulated under an existing discharge permit. This will give these systems ample time to obtain the required information from their applicators and to develop any additional information on their own facilities. New operations are required to submit Letters of Intent at least 30 days prior to the use of reclaimed domestic wastewater for landscape irrigation. This difference in timing is appropriate as existing facilities have been operating under a different set of regulatory requirements while new operators will be made aware of the requirements of these regulations through the site application approval process for domestic wastewater treatment works.

The Commission has established a 30-day period during which the Division must notify the applicant if the Letter of Intent is incomplete. This period is long enough to allow the Division to complete its review of the application and will not unreasonably delay approval of new systems or the addition of new applicators to existing systems.

D. Notices of Authorization

The Division has an additional 30 days from the time that the Letter of Intent is determined to be complete to issue the Notice of Authorization. This Commission finds this to be reasonable amount of time as the treater will have already received approval of the site application for the treatment facilities such that a substantial amount of information regarding the system will have already been provided to the Division. The Commission has required a Notice of Authorization to be issued to the treater and each applicator as a means of ensuring that the burden of compliance with the regulations is fairly distributed between the entity providing the reclaimed domestic wastewater and the entity that is putting that water to use.

The Commission has provided the opportunity for the treater, an applicator, or any other aggrieved party to appeal the Division's decision to issue or deny a Notice of Authorization in accordance with the Commission's procedural regulations.

The Commission has not limited the effective period of the Notice of Authorization since changes other than the addition or removal of applicators are expected to be relatively infrequent. This will reduce the burden that renewing Notices of Authorization would have on both the treater/applicator and the Division.

Notices of Authorization will include appropriate monitoring and reporting requirements, reclaimed domestic wastewater standards, and other necessary conditions to ensure the protection of the environment and public health.

E. Reclaimed Domestic Wastewater Standards

Treatment Requirements and Technology-Based Limits

The public health risk of contracting disease from pathogenic microorganisms via exposure to reclaimed domestic water is mitigated by treating wastewater so as to minimize the number of viable pathogenic microorganisms: bacteria, viruses and protozoans. Acceptable public health risk is determined based on an absence of acute gastrointestinal disorders [the most likely type of disease manifestation] in those persons casually exposed to reclaimed domestic wastewater as it is used for surface irrigation of landscaping. Bacterial protection is ensured through the imposition of limits on E.coli , a surrogate organism for determining the potential presence of bacterial pathogens. Viral and protozoan (meaning specifically enteroviruses, and giardia/cryptosporidia parasites) protection is ensured by the imposition of limits for turbidity or total suspended solids, as appropriate.

The Commission has determined that, for unrestricted use of reclaimed domestic wastewater, which has a higher level of public contact, an additional barrier is appropriate to ensure the physical removal of pathogenic organisms that may potentially be present in the wastewater. Therefore, filtration, with associated turbidity limits to ensure the proper operation of the filtration facilities, is required for treaters practicing unrestricted use. Dilution after the filtration process will not provide a positive barrier to pathogenic organisms and is not allowed to be used as a means of complying with limits unless a variance has been obtained. Restricted use, with its much lower potential for public contact, will not require filtration; however, total suspended solids limits consistent with a well-operated secondary treatment system will be required.

Selection of turbidity as a surrogate measure of microbial purity for reclaimed domestic water is valid as an inexpensive means of determining microbial purity with regard to viruses and parasites. There is an absence of data to absolutely define a turbidity at or below which viruses will be absent. Actual turbidity vis-a-vis virus density data illustrate that, when combined with adequate disinfection, an absence of virus plaque forming units can be achieved up to turbidity levels of six NTU (nephelometric turbidity units). (D'Angelo, et al. Pilot Testing to Evaluate Virus Removal and Deactivation, Proceedings of the 1984 Specialty Conference on Environmental Engineering, ASCE/Los Angeles, California, June 25-27, 1984). Similarly, from 1984 to 1991, comprehensive virus testing by Dr. Gerba at the University of Arizona recovered only one plaque forming unit (virus) from the Tucson Water Department's recycled water facility which was operating with a five NTU limit with an actual turbidity averaging between 3.5 and 4.0 NTU. In addition, there are four turbidity levels used among several states that permit the use of reclaimed domestic wastewater for irrigation. A two NTU limit is used in California, Missouri, and Oregon, a three NTU limit is used in Nevada and Texas (30-day average in TX, only), and a five NTU limit is used in Tucson, Arizona. In some cases concomitant virus and parasite (specifically Ascaris lumbricoides) monitoring is required; in other cases virus or parasite monitoring is required with no attention paid to turbidity; and in one case total suspended solids limits are used instead of turbidity limits. There is no consensus among the several states as to the appropriate turbidity limit. Accordingly, the Commission has selected a middle ground for unrestricted use application of reclaimed domestic wastewater. For these systems, calendar-month-average and maximum limits will be set at three NTU and five NTU (not to be exceeded in more than 5% of samples), respectively. No turbidity limits are required for restricted use sites, however, a total suspended solids limit of 30 mg/l is required as a daily maximum. This is deemed a somewhat conservative health risk-based standard given the low potential for contact with reclaimed domestic wastewater in this circumstance. This standard is technologically achievable and the Commission finds it to be appropriate to maintain public confidence in reclaimed domestic wastewater.

Indicator Organism and Limits

The Commission finds that E.coli is the appropriate surrogate indicator organism for determining the potential presence of bacterial pathogens in reclaimed domestic wastewater. The use of E. coli is appropriate primarily based on contemporary research presented in EPA documents summarizing the scientific studies. The most recent scientific data is contained in EPA 440/5-84-002 (Ambient Water Quality Criteria for Bacteria – 1986), and Dufour's USEPA study (Dufour, A.P., 1984, Health effects criteria for fresh recreational waters: EPA 600/1-84-004). The evidence demonstrates that E.coli is the best possible indicator organism because the ratio between pathogens of fecal origin to indicator organisms is most valid for E.coli. Furthermore, E.coli does not regrow once it is released into the ambient environment, where it only survives for about 110 hours.

This is similar to pathogen survival. These criteria do not hold for the traditional indicator organisms such as total and fecal coliforms. (Cabelli, V.J., 1982, Microbial Indicator Systems for Assessing Water Quality, Antonie van Leeuwenhoek, 48:613). In August 1998 US EPA's Office of Science and Technology, on the advice of 14 experts, strongly agreed that E.coli was the only appropriate indicator of fecal contamination.

E. coli also more closely meets and fulfills the traditional and long standing requirements of a surrogate indicator organism for pathogens. These criteria are that an indicator must be a biotype that is prevalent in sewage and excreted by humans and warm blooded animals. It should be present in greater abundance than pathogenic bacteria and the indicator should not be readily capable of proliferation. Ideally the indicator will be more resistant to disinfectants than pathogenic bacteria but will otherwise have a similar ambient survival time with them; and, the indicator should be quantifiable by simple, inexpensive, and rapid laboratory procedures. (Kott, Y., Current Concepts of Indicator Bacteria, BACTERIAL INDICATORS/HEALTH HAZARDS ASSOCIATED WITH WATER, ASTM STP 635, A. W. Hoadley and B. J. Dutka, Eds. American Society for Testing and Materials, 1977, pp 3-13.) E. coli satisfies more of these than any other indicator microorganism recommended by health professionals for fresh water.

There are few epidemiological studies that evaluate the risk of contact with reclaimed domestic wastewater. The Commission has set the limits for E. coli at a level equivalent to that recommended by EPA for swimming beaches in Ambient Water Quality Criteria for Bacteria – 1996 which recently was reaffirmed by EPA in Draft Implementation Guidance for Ambient Water Quality Criteria for Bacteria 1996 (January 2000). While these uses do not directly correlate, the Commission has found this to be an acceptable level of risk particularly when considering that, in establishing the limit for swim beaches, it was assumed that 100 ml of water was ingested. It is reasonable to expect that criteria established to protect swimmers will be more protective of individuals casually exposed to irrigation spray of reclaimed domestic wastewater.

F. Additional Conditions

The Commission is establishing a number of conditions for the application of reclaimed domestic wastewater that are intended to provide additional assurance that the health of the public will be protected by minimizing exposure to pathogenic organisms and that runoff from reuse sites will not leave the application site or enter state waters in appreciable amounts. In response to concerns raised regarding how the restricted use conditions of the regulation may be applied to use of reclaimed domestic wastewater for irrigation of golf courses, the Commission anticipates that golf course irrigation that occurs before and after normal operating hours on golf courses that restrict public access during such times will typically satisfy the requirements of subsection 84.8(A) of the regulation.

G. Monitoring and Reporting

The Commission finds that compliance oversight of the applicators should be shared by both the Division and the treater. The treater, based on its relationship with the applicator, is in a better position to oversee the operations of the applicator and can generally resolve violations without Division intervention as part of their routine program activities. If these efforts fail to return the applicator to compliance, then the Division will assume the lead role in the compliance oversight efforts.

Due to the limited part of the year during which irrigation takes place, the Commission finds that it is appropriate to limit the submittal of reported information to an annual report. The annual report must include the confirmation that the treater conducted inspections at a representative number of applicator sites as part of the treater's overall compliance assurance program.

H. Variances

The Commission is establishing a provision for variances from any aspect of the regulation but notes that the burden is on the treater to demonstrate that compliance with the regulations is unreasonable in light of the costs to comply.

The Commission recognizes that several reclaimed domestic wastewater systems were constructed and operated prior to the adoption of this regulation. This regulation is not intended to force existing systems to make capital improvements solely for assuring standardization if they accomplish the objectives of this regulation.

PARTIES TO THE RULEMAKING HEARING

1. Spring Valley Sanitation District
2. The City of Thornton
3. The City and County of Denver, Board of Water Commissioners
4. The City of Westminster
5. Roxborough Park Metropolitan District
6. Plum Creek Wastewater Authority
7. The City of Broomfield
8. The Farmers Reservoir and Irrigation Company

9. Colorado Water Conservation District
10. Colorado Springs Utilities
11. The Town of Hotchkiss
12. Spring Valley Development, Inc.
13. The City of Aurora
14. Chatfield Watershed Authority
15. The City of Blackhawk
16. Public Service Company of Colorado

84.22 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE (April 2004 Hearing)

The provisions of sections 25-8-205(1) and 25-8-308(1)(h) C.R.S. provide the specific statutory authority for adoption of amendments to the Reclaimed Domestic Wastewater Reuse Control Regulation. The Commission also adopted, in compliance with section 24-4-203(4), C.R.S., the following statement of basis and purpose.

Basis and Purpose

When the Commission adopted Regulation 84 in October 2000, it limited its scope to use of reclaimed domestic wastewater for landscape irrigation. On October 8, 2003, the Water Quality Control Division and the Joint Water Reuse Committee of the Rocky Mountain Section American Water Works Association and Rocky Mountain Water Environment Association ("RMSAWWA/RMWEA") requested that the Commission review Regulation 84 for the purpose of considering industrial and commercial uses of reclaimed domestic wastewater. On April 12, 2004, the Commission held a rulemaking hearing during which several modifications and additions to the regulation were adopted. The Commission modified section 84.4 of the regulation to clarify that reuse of reclaimed wastewater for the uses identified in section 84.8 of the regulation is prohibited except where authorized pursuant to a Notice of Authorization. This change was made to clarify the Commission's intent that regulation 84 does not preclude the Division from authorizing uses of reclaimed wastewater that fall outside of the current scope of Regulation 84, where the Division is legally authorized to do so.

As a result of this rulemaking, the Commission amended Regulation 84 to further promote the use of reclaimed domestic wastewater, by allowing such water to be used in industrial and commercial applications as well as landscape irrigation. The Commission finds that the industrial and commercial uses contemplated by these amendments will create no greater risk to public health or the environment than the landscape irrigation uses authorized before the amendments.

The regulation, as amended, provides a framework that assures these additional uses are consistent with the Commission's goals of protecting the public health and the environment, by requiring reclaimed domestic wastewater to meet minimum standards, and requiring treaters and users of such water to employ appropriate best management practices and oversee its use.

The Commission adopted provisions requiring treaters to provide the Division with a "User Plan to Comply" for each user, prior to receiving authorization to provide reclaimed domestic wastewater. The plan shall describe the intended use and the best management practices the user will employ, and demonstrate how these practices ensure the proposed landscape irrigation, industrial or commercial use will be protective of public health and the environment.

The Commission also revised the regulation for clarity by renumbering sections, revising language, and reorganizing the regulation.

The Commission concludes that the amendments to this regulation are economically reasonable considering the economic, environmental, and public health costs and impacts of the reuse program.

Section 84.2 was modified to clarify the Commission's intent that the regulations protect the environment as well as public health. Section 84.4 was revised to expand Regulation 84's applicability for reclaimed domestic wastewater and to remove obsolete references. Section 84.4 was also revised to replace the term "direct reuse" with "reuse," as the exceptions provisions in section 84.4 already exempt waters discharged to state waters from coverage under Regulation 84. Language was also added to section 84.4 to clarify that treaters and landscape irrigation users who are operating under already existing Notices of Authorization do not need to resubmit Letters of Intent upon promulgation of these regulatory amendments. The Division will issue amended Notices of Authorization to the existing treaters and landscape irrigation users as routine amendments are made to their user information and Letters of Intent, or by June 30, 2006, whichever comes first. However, treaters and users who had implemented programs for use of reclaimed water prior to the effective date of the regulation for any use other than landscape irrigation must submit new Letters of Intent for such use(s) to the Division no later than August 31, 2004.

The Commission adopted amendments adding, deleting, and modifying definitions used in Regulation 84. The following definitions were modified or deleted to increase clarity or to achieve consistency with other revisions: "Point of Compliance," "Reclaimed Domestic Wastewater," "Restricted Use," and "Treater." The definition of "Direct Reuse" was deleted consistent with the change to section 84.4 noted above. The definition for "Applicator" was deleted and replaced with a more generic definition of "User" to include all types of users of reclaimed domestic wastewater. The following definitions were added:

"CommercialUser" describes a new type of user; "Industrial User" describes a new type of user; "Irrigation System" reduces confusion by differentiating between a user's irrigation system and a treater's treatment and transmission facilities; "Landscape Irrigation User" aids in differentiating between types of users; "Restricted Access" is used in place of "restricted use" for clarity; "TransmissionSystem" reduces confusion by differentiating between a treater's facilities and a user's irrigation system; "Unrestricted Access" is used in place of "Unrestricted Use" for clarity; "User" describes the characteristics of users; and "User Plan to Comply" refers to the plan a user is required to submit to show compliance with Regulation 84.

The Commission reorganized and edited section 84.6(a) [formerly 84.5(A)] regarding letters of intent, for clarity, completeness, and consistency with other revisions. Treaters must still submit a Letter of Intent to the Division, but the Letter of Intent requirements differ, depending on the intended uses for the reclaimed domestic wastewater. In addition, the Commission recognizes that to facilitate new or expanded uses for reclaimed domestic wastewater and timely approval of projects, the Division must have some flexibility in administering the Letter of Intent process. For instance, the revisions would allow a treater to submit a Letter of Intent concurrently with a pending site application and/or facility plans and specifications.

The Commission amended subsection 84.6(A)(3) [formerly 84.5(A)(3)], to clarify that treaters are required to provide information demonstrating that reclaimed domestic wastewater applied to landscapes by landscape irrigation users will be applied at or below agronomic rates or, where application at agronomic rates is not or will not be achieved, that land application is being done pursuant to a CDPS permit. The Commission is aware that some entities may have been land applying in excess of agronomic rates, and that they have incorporated the return rates to ground water into their discharge permits and into augmentation plans. The Commission adopted this change to provide flexibility to entities practicing landscape irrigation so that they can maintain their current application practice, and associated credits under their augmentation plan, while applying reclaimed water in excess of agronomic rates pursuant to a CDPS permit. The Commission added language indicating that land application may also be subject to waste load allocations or limits as contained in a TMDL or control regulation governing the watershed within which the land application occurs, to clarify that Regulation 84 acts in tandem with these regulatory requirements. The agronomic application rate requirement does not apply to commercial and industrial users.

The Commission reorganized subsection 84.6(A)(6) [formerly 84.5(A)(6)] by moving existing requirements for users into modified sections 84.9 and 84.10, which contain the required content of a “User Plan to Comply” for each different type of use. The purpose of the User Plan to Comply is to provide the Division with information from each user that demonstrates that the proposed landscape irrigation, industrial or commercial use will be protective of public health and the environment.

The Commission amended subsection 84.6(A)(7) [formerly 84.5(A)(7)] to simplify the Letter of Intent process while, at the same time, fulfilling the Commission’s responsibility under C.R.S. 25-8-104 to determine if any decision it makes has the potential to cause material injury to water rights.

The Commission moved the requirement that a treater must update and modify its Letter of Intent under certain circumstances to subsection 84.6(E)(7) [formerly 84.5(A)(8)] under Terms and Conditions of Notices of Authorization. The Commission inserted a requirement for the treater to include a letter from the fire protection authority indicating its approval for use of reclaimed domestic wastewater for fire protection activities. This requirement assures that the fire protection authority has been solicited. This section 84.6(E) [formerly 84.5(E)] regarding Notices of Authorizations was revised for clarity, completeness, and consistency with other revisions.

In this rulemaking, the Commission established category-based standards for reclaimed domestic wastewater quality in section 84.7 [formerly 84.6]. Category 1 standards apply to water previously designated for “restricted use,” and Category 2 standards apply to water previously designated for “unrestricted use.” The category framework allows the Commission to identify with more precision the appropriate uses for various qualities of reclaimed domestic wastewaters, while the terms “restricted use” and “unrestricted use” were found to be incompatible with the diverse industrial and commercial settings where reclaimed domestic wastewater is now authorized to be used. The category-based framework also will facilitate the Commission’s future review of proposed uses for reclaimed domestic wastewater that may require different water quality.

The Commission found no reason to reassess the treatment standards adopted for reclaimed domestic wastewater. The Commission, in the 2000 rulemaking, found those standards to be appropriate for the use of reclaimed domestic wastewater for landscape irrigation and the Commission finds them to be sufficiently protective of public health and the environment for the additional approved industrial and commercial uses when best management practices are employed.

The Commission modified the treatment requirements for reclaimed domestic wastewater by replacing the term “oxidized” with “secondary treatment.” Secondary treatment is generally accepted in the wastewater industry to mean that wastewater has been biologically treated to remove at least 85% of BOD and total suspended solids.

The Commission established a new section 84.8 to identify different approved uses for reclaimed domestic wastewater. A table is provided detailing the landscape irrigation, industrial and commercial uses approved by the Commission if such use is conducted in accordance with a Notice of Authorization under Regulation 84. Each new use is addressed below:

Cooling Tower: The Commission approved the use of reclaimed domestic wastewater in cooling towers, based on findings that indicate the quality of the source (make-up) water used in cooling towers is not of great concern. When best management practices typically applied at cooling towers are employed, the quality of the source water does not increase any risk to public health or the environment. Cooling towers are not accessible to the public and are maintained in a fashion that the water quality inside the cooling tower is controlled to standards that protect human health, regardless of the make-up water quality.

Concrete Mixing and Washout: The Commission approved the use of Category 1 reclaimed domestic wastewater in concrete batching processes where the water is mechanically dispensed into the truck mixer drum through a metal chute. This use of reclaimed domestic wastewater is protective of public health and the environment due to the fact that the water is dispensed by computer operated equipment, preventing worker contact, and the high pH of batched concrete would not allow the growth of microorganisms. Additionally, the water is entrained in the concrete and, therefore, is not discharged to surface or groundwater. Due to the potential for public and worker exposure, Category 1 reclaimed domestic wastewater may not be used for purposes other than mixing of the concrete. The Commission approved using Category 2 reclaimed domestic wastewater for batching concrete, for truck wash-down purposes at the plant, as an on-truck water supply to use for maintaining and adjusting concrete slump, and for wash-out purposes at the site. The Commission realizes that when proper BMPs are implemented, this use is protective of public health and the environment.

Dust Control/Soil Compaction/Mechanized Street Sweeping: The Commission approved the use of reclaimed domestic wastewater to wet down or pre-water work surfaces, for construction and demolition activities, sandblasting, soil compaction, and mechanized street washing. Approval is conditional on the user demonstrating that the application rate for these uses will not result in ponding or runoff into waters of the state, and that off-property transport of airborne particulate matter will be minimized. These uses are deemed protective of public health and the environment because the potential for public exposure for these activities when best management practices are implemented is minimal.

Closed Loop Cooling System: The Commission approved the use of reclaimed domestic wastewater in closed loop cooling systems where water circulates only within a contained system. This use results in no public exposure to reclaimed domestic wastewater, and only very limited and controlled contact by workers. Environmental risk from this use is also minimal when proper treatment and best management practices associated with the cooling processes are employed. Allowing the use pursuant to the best management practices, including discharging wastewater from the cooling process to the sanitary sewer system or other approved disposal mechanism, required by the regulation creates no greater risk to public health and the environment than using potable water in the cooling system.

Zoo Operations: The Commission approved the use of reclaimed domestic wastewater in zoo operations, including the care of captive animals. The Animal and Plant Health Inspection Service of the U.S. Department of Agriculture enforces the Animal Welfare Act, which governs the humane care and treatment of warm blooded and marine animals held in zoos. These entities must be licensed to operate, and must comply with the care and treatment standards provided by federal law. Category 2 reclaimed domestic wastewater meets or exceeds the water quality standards for zoo animals provided by federal law. Environmental and public health risk from this use is also minimal when proper best management practices associated with zoo management practices are employed. Such practices include discharging animal wastewater to the sanitary sewer system or other approved disposal mechanism, limited public access to water used for animal holding areas and habitat wash-down.

Fire Protection: The Commission determined that providing fire protection (interior sprinkler and exterior hydrants) with reclaimed water meeting Category 2 standards for commercial/industrial buildings is protective of public health when appropriate best management practices are implemented. The exposure to reclaimed water by building occupants during a fire is expected to be of short or no duration. This, coupled with the quality of Category 2 water, will not present a significantly greater risk than exposure to reclaimed water in a park or other landscape irrigation setting. Risks to fire fighters will be further mitigated due to their use of personal protective equipment and the requirement that they be educated in proper use of reclaimed water. Due to an increased risk of cross connection and potentially greater risk to public health, the Commission is not at this time specifically permitting the use of reclaimed water for hydrants in residential neighborhoods or for fire sprinkler systems at any residential structure. However, the Commission understands that the ability to use reclaimed water for such residential firefighting uses may have ramifications for both the costs associated with the construction of, and the need for, “potable” water facilities. The Commission believes, however, that such concerns can be addressed through the use of the variance provisions at section 84.12, whereby the Division can allow such uses on a case-by-case basis, subject to the proponent providing a quality of reclaimed water better than Category 2, and implementing additional BMPs that ensure the impact to public health and the environment are appropriately limited.

Where reclaimed water is used at interior sprinklers, with numerous fire protection outlets, there are increased risks of public exposure to reclaimed water during non-emergencies and for cross connections between the reclaimed water and potable water systems. The Commission is requiring that the additional conditions listed in section 84.8(A)(7) be implemented to strictly minimize these risks.

Water used for firefighting typically becomes polluted during its use. The Commission finds that there is little increased environmental risk associated with the reclaimed water source versus a potable water source for the firefighting water. Due to the emergency nature and low frequency of occurrence, discharges from firefighting activities are exempt from NPDES permitting requirements for non-storm water discharges (40CFR Part 122, §122.26) and shall likewise be exempt from the no discharge to waters of the State’ provision in section 84.4 of this Regulation.

The Commission reorganized and edited section 84.9 [formerly 84.7] to address conditions for each different type of use of reclaimed domestic wastewater. Users must address each condition in a “User Plan to Comply” which varies for each type of use. (Under section 84.6, a treater must submit a User Plan to Comply for each of its users, certify that it will implement its Reuse Management Plan, and monitor the user’s compliance with the User Plan to Comply and the requirements of Regulation 84.) Industrial and commercial users must submit a User Plan to Comply that describes the industrial or commercial operation or process using reclaimed domestic wastewater, an analysis of the specific use’s potential risks to public health and the environment, and best management practices the user will employ to minimize such potential risks. The User Plan to Comply also includes a certification by the user that its use of reclaimed domestic wastewater is consistent with Regulation 84’s purpose of protecting public health and the environment.

Modifications to this section include the following:

- 84.9(A) sets forth the conditions for the application of reclaimed domestic wastewater for landscape irrigation.
- 84.9(B) is a new section setting forth the conditions for industrial and commercial users.
- 84.9(C) sets forth conditions for use applicable to all users, regardless of type. Each of these conditions previously applied only to landscape irrigation users. [formerly 84.7(A)(1), 84.7(A)(2), 84.7(A)(3), 84.7(A)(4), 84.7(C), 84.7(E), 84.7(F), 84.7(G), 84.7(H), 84.7(I), 84.7(J), 84.7(L) and 84.7(M).]

- Former Section 84.7(D) required users to comply with the piping design guidelines contained in AWWA Manual M-24, Dual Water Systems, (AWWA, Denver, CO 1994). This reference was eliminated because the referenced guidelines are not applicable to users' irrigation, industrial and commercial piping systems. Section 84.6(A)(2) of the amended regulation requires the treater to submit proof it has obtained site application approval and design approvals pursuant to the requirements of Regulation No. 22. Treaters' location and design plans and specifications are reviewed by the Division pursuant to Regulation No. 22. It is the intent of the Water Quality Control Division to use AWWA Manual M-24 as guidance during this review.

Section 84.10 [formerly 84.8], which establishes additional conditions for the use of Category 1 reclaimed domestic wastewater, was revised for clarity, completeness, and consistency with other revisions.

The Commission revised section 84.11 [formerly 84.9] to account for industrial and commercial uses, and to eliminate previous monitoring requirements that were impractical and burdensome for treaters and users. Users of Category 1 reclaimed domestic wastewater for landscape irrigation must confirm that application occurred during authorized times instead of requiring the keeping of records showing the actual dates and times that restricted use water was used. This requirement saves time for the treaters, users and the Division while maintaining the original intent.

Section 84.12 [formerly 84.10] was revised for clarity, completeness, and consistency with other revisions. Section 84.13 [formerly 84.11] regarding enforcement was revised for clarity, completeness, and consistency with other revisions.

PARTIES TO THE RULEMAKING HEARING

1. Rangeview Metropolitan District
2. Colorado Wastewater Utility Council
3. The City and County of Denver, Board of Water Commissioners
4. The City of Westminster
5. Airpark Metropolitan District
6. Parker Water and Sanitation District
7. RG Consulting Engineers
8. Xcel Energy
9. Colorado Rock Products Association

84.23 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE (AUGUST, 2005 HEARING, ADOPTED OCTOBER 11, 2005 AND EFFECTIVE NOVEMBER 30, 2005)

The provisions of sections 25-8-205(1) and 25-8-308(1)(h) C.R.S. provide the specific statutory authority for adoption of amendments to this regulation. The Commission also adopted, in compliance with section 24-4-203(4), C.R.S., the following statement of basis and purpose.

Basis and Purpose

On February 14, 2005, the Water Quality Control Division and the Joint Water Reuse Committee of the Rocky Mountain Section American Water Works Association and Rocky Mountain Water Environment Association ("Joint Committee") requested that the Commission review Regulation No. 84 for the purpose of considering additional uses of reclaimed water and other changes to the regulation. On August 8, 2005, the Commission held a rulemaking hearing during which several modifications and additions to the regulation were adopted.

As a result of this rulemaking, the Commission amended Regulation No. 84 to continue to promote the use of reclaimed water. The regulation, as amended, extends its framework to include additional uses or reclaimed water and accompanying requirements to ensure protection of public health and the environment. Specifically, the Commission is requiring reclaimed water to meet minimum standards commensurate with the risks associated with the new uses. Also, treaters and users are required to employ appropriate best management practices and to oversee the use of reclaimed water for such uses.

The Commission concludes that these amendments to Regulation No. 84 are reasonable considering the economic, environmental, and public health costs, benefits and impacts of the water reuse program.

The term “reclaimed domestic wastewater” was changed to “reclaimed water” throughout the Regulation. “Reclaimed water” is the term used in the water reuse regulations of most other states and is also used in EPA’s 2004 Guidelines for Water Reuse. It is desirable to use a common term for this highly treated water as this will assist with public education efforts.

The Commission modified section 84.4 to delete provisions that are no longer applicable and relocated the exemption for irrigation at wastewater treatment facilities to the definition of Landscape Irrigation. The Commission also added, deleted, and modified definitions to increase clarity and to achieve consistency with earlier revisions to this regulation and with other regulations. The definition of “Agricultural Use” was deleted since the regulation does not address this use at this time. The definition of “Agronomic Rate” was expanded to include watering requirements of plants in order to reinforce the Commission’s intent that passage of nutrients below the root zone be strictly minimized. This change operates in conjunction with revisions to sections 84.6(A)(3) and 84.9(A)(4). Specific uses such as Closed Loop Cooling System, Dust Control, and Fire Protection – Non Residential were deleted from section 84.8(A) and are now defined in section 84.5. The definition of “Closed Loop Cooling System” added to Section 84.5 parallels the language currently found in section 84.8(A)(5) of the rule. It is the Commission’s intent that all types of closed loop cooling systems falling within this definition are authorized to use reclaimed water. This includes re-circulating evaporative cooling systems and associated cooling water storage facilities that may be employed in the electric generation industry where public access is not allowed such as the use that has been in place at Platte River Power Authority since 1981. Definitions for “Resident-Controlled Landscape Irrigation” and “Fire Protection – Residential” were also added. For purposes of this regulation, residential areas are land use planning areas zoned for residential use, or otherwise designated for residential use by the applicable local land use planning authority.

The Commission revised section 84.6(A)(3) to require a specific analysis, prior to issuance of a Notice of Authorization, to demonstrate that reclaimed water will be applied at agronomic rates. This was done to ensure that land application done under Regulation No. 84 is protective of ground water quality in light of the Commission’s adoption of revisions to Regulation No. 61 that provide an exemption from the requirement to obtain a discharge permit, in such situations. Similarly, the Commission revised the best management practice at section 84.9(A)(4) to add additional protections for ground water.

In situations where there are applicable limitations on concentration or loading of phosphorus or nitrogen under a control regulation or TMDL, the Commission modified sections 84.6(A)(9) and 84.6(E)(6) to provide an option, at the request of the treater, to have such limitations addressed in the Notice of Authorization. Otherwise, such limitations must be included in a discharge permit issued pursuant to Regulation No. 61.

The Commission refined section 84.6(E)(7) regarding the requirement for a treater to request an amendment to the Notice of Authorization.

The Commission adopted standards and other requirements for Category 3 reclaimed water to apply to two newly authorized uses of reclaimed water. Specific Category 3 uses authorized include the use of reclaimed water for fire protection in residential areas and for landscape irrigation where a single-family resident has control of the plumbing and/or the time of irrigation. When compared with those uses where Category 1 or Category 2 reclaimed water is allowed, uses requiring Category 3 water may present an increased risk of consumption of reclaimed water due to the fact that the number of entities (e.g., single family residents) who control connections after initial construction will significantly increase and these individuals will also control the time and manner in which irrigation takes place. This increases both the possibility of a cross-connection between the reclaimed water and potable water systems and the risk of public contact with reclaimed water. Given this increased risk, the Commission adopted a standard for Category 3 reclaimed water that requires that *E. coli* not be detected in 75% of samples collected in any 30-day period, with a single-sample maximum for *E. coli* of 126 colony forming units (cfu) per 100 milliliters (ml) or a most probable number (MPN) of 126 per 100 ml, depending upon the analytical enumeration method used. This standard recognizes that it is not practical to meet a no detect standard for an indicator organism at all times and is consistent with regulatory requirements used in other states (e.g. Florida) and with the recommendations of the EPA. The rationale for selecting 126 cfu (or MPN) per 100 ml as the single sample maximum standard is consistent with the rationale supporting the *E. coli* standard for Category 1 and 2 reclaimed water. The Commission found that the *E. coli* standard is protective of the public health and environment where Category 3 reclaimed water is used in a manner compliant with the other requirements contained in the regulation.

The Commission exercised its discretion, pursuant to *Citizens for Free Enterprise v. Department of Revenue*, 649 P.2d 1054 (Col. 1982) to adopt these requirements based upon policy considerations about the possible increased risks to public health associated with the Category 3 uses as opposed to specific scientific evidence to that effect.

In addition to compliance with the *E. coli* standard, treaters and users of Category 3 reclaimed water are required to develop and implement appropriate additional best management practices, including public education, to strictly reduce the risk of cross-connections between the reclaimed water and potable water systems. Additional conditions required for Category 3 uses are listed in sections 84.8(A) and 84.9(A).

As revised, section 84.8(A) requires that at a minimum, the numbered conditions indicated in the last column of Table A are required for the corresponding uses. In addition, in accordance with the authority provided in section 84.6(E), the Division may require additional conditions listed in section 84.8(A) for individual reuse activities as it determines appropriate.

The Commission decided not to include specific requirements for continuous disinfection of Category 3 reclaimed water but notes that the requirements for monitoring to determine the quality of all categories of reclaimed water should include frequent determinations to assure that disinfection is being provided prior to use.

The Commission deleted section 84.10 and added provisions to section 84.9(A)(5) regarding the mechanisms that users of Category 1 reclaimed water must employ to restrict access to areas when irrigation is taking place.

In order to avoid the need to commit an excessive amount of Division resources for regulatory oversight when Category 3 reclaimed water is used, section 84.9(A)(6) requires the treater to assume responsibility for the numerous residential users inherent when reclaimed water is used for resident-controlled landscape irrigation and there is not an acceptable entity (e.g., homeowners' association) to assume said responsibility.

The Commission moved the provisions of section 84.11(C) to subsection (B) of new section 84.10 and also added a specific requirement to report violations pursuant to new section 84.10(C)(1).

At the time the Commission initially adopted the Variance provision in Section 84.12, it excluded authorization to the Division to provide a variance for the *E. coli* standards. The Commission now concludes that it is appropriate to provide a variance from the "235/100 ml single sample maximum" standard on a case-by-case basis. For example, testimony was received from the City of Fort Collins and the Platte River Power Authority concerning a use that has been in effect since 1981 without incident. Some of the effluent from the city's Drake facility is pumped 27 miles in an underground pipeline for ultimate addition to Platte River's 16,000 acre foot, 500 surface acre long term carryover storage reservoir for recirculating cooling water use at the Rawhide energy station. There is no public access to any part of the process and as a result, there is no public exposure to reclaimed water and potential worker exposure is adequately limited and controlled with safety procedures and best management practices. To avoid the necessity for capital and operational costs for investments associated with meeting the single sample maximum standard in the regulation, Fort Collins and Platte River requested a limited change in the Division's authority to grant a variance from this aspect of the *E.coli* standard. When Regulation 84 was adopted in 2000, the Commission noted in its Statement of Basis that reclaimed domestic wastewater systems had been constructed and been in operation prior to the adoption of the regulation. It was emphasized that this regulation is not intended to force existing systems to make capital improvements solely for assuring standardization if they accomplish the objectives of this regulation. The Commission has determined it is appropriate to provide authority to the Division to grant a variance from the single sample maximum standard when it concludes that the cost of compliance does not bear a reasonable relationship to the environmental or public health benefits.

As noted in the Statement of Basis when the Commission added *E.coli* to the Basic Standards for Surface Waters in 2000, there is great variability in individual bacteriological samples because bacteria are not uniformly distributed in water samples. A single sample may give a false impression of potential risk of violation of a standard based on a geometric mean. In cases where there is limited or no public exposure and potential worker exposure is controlled by best management work place standards, the resulting lower risk warrants the option for the Division to consider a variance from the single sample maximum standard.

The Commission also corrected references to "E coli" in Regulation No. 84 to the italicized *E coli*.

PARTIES TO THE RULEMAKING HEARING

1. RMWEA/RMSAWWA Water Reuse Joint Committee
2. Platte River Power Authority
3. Plum Creek Wastewater Authority
4. Dominion Water & Sanitation District
5. Eastern Adams County Metropolitan District
6. The City of Aurora
7. Xcel Energy

84.24 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE (August, 2007 Hearing)

The provisions of sections 25-8-205(1) and 25-8-308(1)(h) C.R.S. provide the specific statutory authority for adoption of amendments to this regulation. The Commission also adopted, in compliance with section 24-4-203(4), C.R.S., the following statement of basis and purpose.

Basis and Purpose:

Regulation 84.4 was amended to state that wastewater that has been treated and is used at a domestic wastewater treatment plant (DWWTP) site for landscape or process uses is not subject to Regulation 84. Landscape irrigation with treated effluent at a DWWTP was previously excluded in the definition of landscape irrigation. Section 84.5(10). This exclusion was deleted from the definitions section and moved to the applicability section 84.4, together with a new exclusion dealing with process waters used at a DWWTP site. The Commission believes it is more logical to include these exclusions in the section dealing with applicability.

The Commission found that it is appropriate to exclude process water used at a DWWTP site because process water uses are restricted to the DWWTP site and access to these sites is restricted and not open to the public. The use of process water is limited and controlled by DWWTP staff who are trained in the handling and use of process water. It is the Commission's intention that after the process use is completed, the process water will be captured and returned to the wastewater treatment process and not discharged separately to waters of the state.

The Commission deleted the provision in section 84.6(A)(3) that allowed landscape irrigation to be done above agronomic rates where the treater or user, as appropriate, had obtained a CDPS ground water discharge permit. The Commission understands that there are no entities currently making use of this provision and found it to be inconsistent with the original intent of Regulation 84 which was to address the use of reclaimed water under a single regulation. In addition the Commission finds, based on the typical nutrient content of treated wastewater and the watering needs of landscape plants, that application of reclaimed water at agronomic rates is achievable under normal circumstances.

**84.25 STATEMENT OF BASIS SPECIFIC STATUTORY AUTHORITY AND PURPOSE: MAY 13, 2013
RULEMAKING; EFFECTIVE JULY 30, 2013**

The provisions of sections 25-8-202, 25-8-205(1) and 25-8-308(1)(h), C.R.S. provide the specific statutory authority for adoption of amendments to this regulation. The Commission also adopted, in compliance with section 24-4-203(4), C.R.S., the following statement of basis and purpose.

BASIS AND PURPOSE

The use of reclaimed water has significantly increased in Colorado over the past decade and Treaters and potential Users of reclaimed water have identified an interest in new uses for reclaimed water that are not currently authorized under Regulation No. 84. Proponents from the Joint Water Reuse Committee of the Rocky Mountain Section American Water Works Association and Rocky Mountain Water Environment Association ("RMSAWWA/RMWEA") and the Colorado Section of the WaterReuse Association, participating in a Water Quality Forum Work Group, requested that the Commission review Regulation No. 84 for the purpose of considering additional uses of reclaimed water.

As the Commission indicated in its initial adoption of Regulation No. 84, the use of reclaimed water is subject to Colorado water rights law. Several large municipalities have the right to use a portion of their water supply "to extinction" under Colorado law and have significant amounts of such water that are currently being discharged from the wastewater treatment facility rather than being further treated and reused.

In the 2010 triennial review for Regulation No. 84, the Commission discussed ideas that the Division and interested parties had brought forth for adopting new uses including modifying the regulation to establish broader categories of uses within which the Division could approve new uses. The Commission understands that the Division would need additional resources to implement such a scheme. However, in the interest of addressing the growing use of reclaimed water in Colorado in a timely manner, the Commission approved the renaming and addition of several specific new uses through these modifications to Regulation No. 84.

The Commission found that the following modifications to the authorized uses in Section 84.8 Table A are consistent with the intent of the original authorization of these uses, and present no increase in the potential risk to human health or the environment. By modifying the nomenclature and definitions for these categories of approved uses, the regulation and Notices of Authorization issued by the Division afford the same protections for comparable industrial and commercial uses with similar human exposure, environmental release, and cross-connection potential.

- "Cooling Tower" was renamed "Evaporative Industrial Processes"
- "Closed Loop Cooling System" was renamed "Non-Evaporative Industrial Processes"
- "Dust Control", "Soil Compaction", and "Mechanized Street Cleaning" were combined and renamed "Non-Discharging Construction and Road Maintenance"
- "Concrete Mixing and Washout" was divided into two uses, "Non-Evaporative Industrial Processes" and "Washwater Applications," respectively

The Commission found that adding several new uses, with appropriate conditions placed on their use, will further facilitate the safe and efficient use of Colorado's limited water resources. The Commission approved the addition of the following Commercial Uses: Commercial Laundries, Automated Vehicle Washing, and Manual Non-Public Vehicle Washing, and a new Agricultural Irrigation use.

Evaporative Industrial Processes

The Evaporative Industrial Processes use includes, but is not limited to, the following representative applications where water is used in an industrial process where the benefit of such use requires the evaporation of water, requiring additional make-up water: cooling tower use and gas and odor adsorption. In modifying the nomenclature for this category so that it now covers multiple evaporative industrial process uses, the Commission recognized that many evaporative industrial processes have the potential to use reclaimed water instead of potable or other water supplies, with similar low potential for human exposure, releases to the environment, and cross connections. It is the Commission's intent that no discharges to waters of the state shall be allowed with this use unless authorized via an approved permit under the Colorado Discharge Permit System (CDPS).

Non-Evaporative Industrial Processes

The Non-Evaporative Industrial Processes use includes, but is not limited to, the following representative applications where water is used in an industrial process, is not evaporated in the process, is used within a contained system, and is either discharged to a sewer system as a blow down (e.g., closed loop cooling systems) or is incorporated into a product that is not intended for personal contact or ingestion (e.g., those in which the water is retained in the product and conditions prevent excessive microorganism growth, such as the high pH of batched concrete): closed loop cooling systems (a previously-approved use, Sections 84.8 and 84.22), concrete makeup water (a previously-approved use as concrete mixing and washout, Sections 84.8 and 84.22), boiler feed water, water for lime slaking, and industrial process makeup water. In modifying the nomenclature for this category so that it now covers multiple non-evaporative industrial process uses, the Commission recognized that many industrial processes have the potential to use reclaimed water instead of potable or other water supplies, with similar low potential for human exposure, releases to the environment, and cross connections. It is the Commission's intent that no discharges to waters of the state shall be allowed with this use unless authorized via an approved permit under the CDPS.

Non-Discharging Construction and Road Maintenance

This approved use incorporates the following previously-approved representative uses for Mechanized Street Sweeping, Soil Compaction, and Dust Control. Other similar uses of water, including but not limited to cooling water for pavement cutting operations, are also authorized under this approved use. It is the Commission's intent that no discharges to waters of the state shall be allowed with this use unless authorized via an approved permit under the CDPS.

Washwater Applications

The Commission approved the new Washwater Applications use, which includes concrete washout as previously approved under Concrete Mixing and Washout. Washwater Applications would also include water used in washing of miscellaneous equipment, washing of product in mineral processing, and other similar uses where reclaimed water is used to remove material from equipment or a product. This use has been evaluated for risks to human health via ingestion, inhalation, and dermal contact. Best management practices (BMPs, specified as Additional Conditions in Section 84.8 and 84.9) and allowable water qualities are specified to mitigate these risks. It is the Commission's intent that no discharges to waters of the state shall be allowed with this use unless authorized via an approved permit under the CDPS.

Commercial Laundries, Automated Vehicle Washing, and Manual Non-Public Vehicle Washing

The Commission approved three new uses not previously authorized under Regulation 84 (Commercial Laundries, Automated Vehicle Washing, and Manual Non-Public Vehicle Washing) based upon an evaluation of the potential human health risks via ingestion, inhalation, dermal contact and cross-connection as well as the potential for discharging reclaimed water to a water of the state (groundwater or surface water). BMPs for each use and allowable water qualities were specified to minimize these risks. In assessing the proposed modifications to Regulation 84, typical uses of water in commercial laundries and automated and manual vehicle washing facilities were reviewed to characterize the likelihood and impacts of human contact with reclaimed water and releases of reclaimed water to waters of the state.

The Commission found that the potential for ingestion is negligible for all three proposed uses, in light of the limited access to the public and the commercial and industrial nature of the water use. The risk of ingestion in these new uses is further mitigated by the BMPs specified for these uses in Regulation 84. In light of the potential worker or public contact with aerosols in vehicle washing applications, the Commission considered additional information to assess the potential for human health effects of such contact. This information included the 2012 USEPA Guidelines for Water Reuse, regulations in other states that authorize commercial laundry and vehicle washing uses, a risk assessment based on available research and literature regarding health impacts of inhalation of recycled water aerosols, and a comparison of water quality in internally-recycled vehicle washing water systems fed by potable water to the water quality of recycled water produced by an existing Treater. This indicated to the Commission that a high level of disinfection (Category 3 water) is appropriate for situations where there is a high likelihood of frequent worker contact with reclaimed water aerosols for these uses. Alternatively, BMPs should be employed to prevent worker inhalation exposure if less stringent disinfection (Category 2 water) is employed.

The Commission found that:

- Secondary treatment and disinfection (Category 2 Reclaimed Water) is an appropriate treatment requirement for the use of reclaimed water in commercial laundry where there is no frequent worker or public exposure to aerosols generated from reclaimed water use.
- In vehicle washing facilities with a likelihood of worker or public exposure to aerosols generated from reclaimed water use, filtration and high-level disinfection (Category 3 Reclaimed Water) provides human health protection against aerosol inhalation risks. Alternatively, BMPs must be used to prevent the inhalation of aerosols with use of Reclaimed Water Category 2.

- Effective BMPs for physically preventing human contact with aerosols include personal protective equipment documented to prevent inhalation of aerosols, or other means as documented by a certified industrial hygienist.

Accordingly, the Commission approved the addition of two new Additional Conditions at Section 84.8(A)(7) and 84.8(A)(8) for applicability to Commercial Laundries, Automated Vehicle Washing, and Manual Non-Public Vehicle Washing as identified in 84.8 Table A. The Commission also determined that the Additional Condition in 84.8(A)(7) is applicable to the following renamed and new uses, in consideration of the type of use and potential for frequent worker or public exposure to aerosols: Washwater Applications, Non-Discharging Construction and Road Maintenance, and Non-Evaporative Industrial Processes.

The Commission found the overall risk to Commercial Laundry and Vehicle Washing workers and the public associated with ingestion and dermal contact is less than swimming at a swim beach and comparable to or less than other previously approved commercial and industrial uses of Category 1, 2, and 3 Reclaimed Water. For each of these proposed uses, the Commission found the potential for cross-connecting potable and recycled water piping is similar to previously approved Commercial and Industrial uses of Category 1, 2, and 3 Reclaimed Water. The existing BMPs for cross-connection control in Regulation 84 (at 84.9(C)(5), 84.9(C)(7), and 84.9(C)(8)) will apply to these new uses as well.

The Commission approved the modification of Section 84.8(A)(3) to read "Application rates or other measures shall be employed to minimize ponding on or runoff from the area approved for application or use," and specified that this Additional Condition be required for Automated Vehicle Washing and Manual Non-Public Vehicle Washing uses. It is the Commission's intent that no discharges to waters of the state shall be allowed with these uses unless authorized via an approved permit under the CDPS.

Non-Food Crop Irrigation and Silviculture

The Commission found that the use of reclaimed water for irrigation of certain agricultural crops and trees, when implemented in accordance with the reclaimed water quality standards and BMPs established in Regulation 84, is protective of public health and the environment. Adding agricultural irrigation as an approved use of reclaimed water will encourage the expanded use of reclaimed water in Colorado and is anticipated to reduce the regulatory compliance burden on Treaters and Users by allowing them to be permitted under a single control regulation where multiple approved uses of reclaimed water are implemented.

Health risks to the public or workers associated with potential contact with reclaimed water used for agricultural irrigation were determined to be of a comparable or lower magnitude than those associated with landscape irrigation. Environmental risks associated with runoff or excessive percolation of reclaimed water to waters of the state are determined to be of a comparable or lower magnitude than those risks associated with landscape irrigation. The Commission found that there is little increased risk of cross connection associated with the use of reclaimed water versus traditional sources of water used for agricultural irrigation.

The Commission found that Category 1 water is acceptable for irrigation of those non-food crops permitted to be irrigated with reclaimed water pursuant to this Control Regulation and that the criteria for Category 1 water are generally consistent with the treatment level requirements and water quality standards adopted by several other states (e.g., Arizona, California, Florida, and Texas) and countries for the irrigation of non-food crops. The Commission found that the BMPs established for restricted access landscape irrigation are appropriate and adequate for agricultural irrigation.

Annual Report Requirements

As part of this rulemaking, the Commission also revised the annual reporting provision to revise the due date of annual reports from January 31 of each year to March 31, to allow Treaters sufficient opportunity to compile reclaimed water use data and related records from the preceding calendar year.

PARTIES TO THE RULEMAKING

1. Colorado Section of the WaterReuse Association, the Joint Water Reuse Committee of Rocky Mountain Water Environment Association, and Rocky Mountain Section of the American Water Works Association (the Proponents)
2. City and County of Denver
3. City of Aurora
4. City of Colorado Springs and Colorado Springs Utilities
5. Rangeview Metropolitan District

84.26 STATEMENT OF BASIS SPECIFIC STATUTORY AUTHORITY AND PURPOSE: AUGUST 6, 2018 RULEMAKING; EFFECTIVE NOVEMBER 6, 2018

The provisions of sections 25-8-202, 25-8-205(1), and 25-8-205.8, C.R.S., provide the specific statutory authority for adoption of amendments to this regulation. The Commission also adopted, in compliance with section 24-4-203(4), C.R.S., the following statement of basis and purpose.

BASIS AND PURPOSE

On April 30, 2018, House Bill 18-1069 was enacted, essentially codifying Regulation 84 provisions such as category standards 1 through 3 and the pre-existing allowed uses of reclaimed water for categories 1 through 3. The primary purpose of House Bill (HB) 18-1069 was to add toilet and urinal flushing in multifamily residential and nonresidential structures as category 3 uses for reclaimed domestic wastewater. The Bill becomes effective on August 8, 2018.

Prior to the enactment of HB 18-1069, the Commission noticed a regulatory proposal by Denver Water to modify Regulation #84 to add toilet and urinal flushing ("fixture"), indoor cannabis irrigation, and adopt new standards for reclaimed water treatment for certain types of treatment systems. Denver Water subsequently withdrew its proposal to add indoor cannabis irrigation to Regulation #84 from consideration. Denver Water and the Division also submitted a motion for consideration of a joint proposal to modify Regulation #84.

On August 6, 2018, the Commission held a rulemaking hearing to consider the joint proposal presented by Denver Water and the Division, for modification of Regulation#84. Following the rulemaking hearing, the Commission updated Regulation #84 to add fixture flushing consistent with the specific definitions and requirements contained in HB 18-1069. The Commission also adopted new definitions and treatment requirements for two types of reclaimed water treatment systems: "centralized reclaimed water treatment systems" (centralized systems) and "localized reclaimed water treatment systems" (localized systems) to further encourage the reuse of reclaimed domestic wastewater and ensure protection of public health. In addition, the Commission adopted a statutory definition of "point of compliance"; described treatment, filtration, and disinfection requirements for centralized systems producing category 3 reclaimed water for toilet flushing; adopted a log reduction treatment approach for localized treatment systems with monitoring requirements for localized systems to ensure that these systems are operating correctly; and additional cross-connection control requirements for uses of reclaimed water used for indoor non-potable uses.

A. Definition of Point of Compliance

The Commission modified the definition of point of compliance to conform with the new statutory definition of point of compliance adopted in HB 18-1069. The definition provides that the point of compliance “means, except as provided in subsection (1)(f)(II) of this section, a point, as identified by the person that treats the water in the reclaimed domestic wastewater treatment process or the reclaimed domestic wastewater transportation process, that occurs after all treatment has been completed but before dilution and blending of the water has occurred.” Subsection (1)(f)(II) provides that “If reclaimed domestic wastewater is used for indoor nonpotable uses within a building where plumbing fixtures are accessible by the general public, ‘point of compliance’ is at the location where water is delivered to the occupied premises.”

Subsection (1)(f)(I) and (II) in HB 18-1069 refer to the categories of reclaimed water (categories 1 through 3) and the standards that must be met regarding total suspended solids, turbidity and *E. coli*. The Commission construed subsection (1)(f)(II) as applying to the disinfection residual. Disinfection residual is a best management practice used to prevent regrowth of waterborne pathogens within indoor plumbing systems. It is not practical from an operational, economic or implementation standpoint to continuously test for *E. coli* at buildings using reclaimed water indoors, but meeting the disinfection residual requirements at the building is practical and will protect public health. The treatment facility supplying the reclaimed water will meet the statutory and regulatory standards after treatment and before dilution and blending.

To protect against potential regrowth of opportunistic pathogens and increases in turbidity in the underground distribution system prior to entering a building, Regulation 84.9(A)(9)(a-c) requires that users follow a best management practice of monitoring for disinfectant residual and/or another approved disinfection methods for indoor uses of reclaimed water, which monitoring may occur at the distal end of the plumbing system. These treatment approaches are intended to prevent growth of opportunistic pathogens, such as *legionella* from proliferating within building plumbing pipes and fixtures. Meeting the residual requirements at the distal end of the plumbing system will protect public health from opportunistic pathogens within buildings as an additional protective measure.

With regard to the point of compliance for localized systems, the point of compliance will be a point, as identified by the treater, in the reclaimed domestic wastewater treatment process or the reclaimed domestic wastewater transportation process, that occurs after all treatment has been completed but before dilution and blending of the water has occurred. The Commission finds that in most cases localized systems will be located at or near the tap of the building, parcel, or district where domestic wastewater is being treated and used. This means that it is less likely that the disinfection residual in reclaimed water produced from localized systems will dissipate due to the shorter travel time for reclaimed water from localized systems to the point of use. In addition, for localized systems there is continuous monitoring of the process system to confirm log removal targets are being met. For these reasons, the point of compliance for disinfection residual for localized systems located near the site of use may also be at the point identified by the treater that occurs after all treatment has been completed but before dilution and blending of the water has occurred.

B. Definitions of Centralized Systems and Localized Systems

The Commission adopted definitions for centralized and localized reclaimed water treatment systems; defined treatment, filtration, and disinfection requirements for centralized systems producing Category 3 reclaimed water for fixture flushing; and adopted a new log reduction treatment approach and control monitoring framework for localized systems to track whether the treatment control system is operating to meet *E. coli* and turbidity requirements.

Centralized Systems

Regulation 84 previously did not define “reclaimed water treatment systems” or “centralized reclaimed water treatment systems”. Rather, reclaimed water treatment systems were encompassed by the definition of “treater” and the definition of “reclaimed water”. The adoption of the definition of “centralized reclaimed water treatment systems” is intended to encompass the reclaimed water treatment systems that would have been defined as a “treater” or “reclaimed water” in the original, 2000 version of Regulation #84.

To distinguish centralized systems from localized systems, the Commission adopted a definition of “centralized reclaimed water treatment systems” that define such systems as receiving domestic wastewater from a diverse service area for treatment to produce reclaimed water for beneficial use where the service area has meaningful inputs from industrial or other diluting sources. The phrase “meaningful inputs or other diluting sources” relates to the consistent watering down of waterborne pathogens in the untreated source water consistent with large municipal-like collection systems.

The Commission adopted filtration standards for reclaimed water produced from centralized systems for toilet flushing based upon a multi-barrier approach. California Title 22 establishes a framework for multiple barrier framework supported by a microbial risk assessment (“MRA”). The Commission found the California treatment recommendations to be too limiting for the expansion of reuse in Colorado and has allowed a wider range of filtration techniques that provide equivalent microbial protections appropriate for indoor reuse application. The Commission concluded that there should be a defined list of technologies allowed for Category 3 reclaimed water used for toilet flushing because of the higher risk of public exposure to reclaimed water from unintended cross-connections. All types of filtration are not adequate for pathogen reduction for indoor uses of reclaimed water. However, the Commission has listed accepted filtration technologies which include any filter approved per 5 CCR 1002-11 and the ability to challenge test and demonstrate reclaimed water specific filtration techniques.

The Commission agreed with the California Title 22 minimum requirement of 5 log virus treatment for indoor uses of reclaimed water. The Commission found that the virus inactivation tables published by the EPA are appropriate when chemical disinfection is used. If UV disinfection is employed, virus disinfection should be measured against Hepatitis A for chemical disinfection or 40 mJ/cm² for ultraviolet light disinfection.

The Commission adopted a new section 84.8, which describes the filtration and disinfection requirements for centralized reclaimed water being used for fixture flushing. The Commission also adopted definitions of filter technologies, including bag filter and cartridge filter, conventional filtration, direct filtration, and membrane filtration. To add clarity regarding the meaning of treatment standards, the Commission adopted definitions for secondary treatment and treatment technique requirements.

The Commission directed the Division to hold a stakeholder process with reclaimed water users, treaters and other interested parties to consider whether similar or alternative treatment techniques should be applied to other categories of reclaimed water and authorized uses.

Definition of Localized Systems

Localized reclaimed water treatment systems are defined by several characteristics that distinguish them from centralized systems. Specifically, localized systems:

- receive and treat domestic wastewater that does not have meaningful inputs from industrial and other diluting sources.
- are located relatively close to the location where wastewater is generated meaning that there is little travel time for wastewater, and less time for pathogen die off to occur.

These factors contribute to more concentrated raw wastewater, and therefore higher pathogen loads in the domestic wastewater treated by localized systems.

To address the distinct characteristics of localized systems, the Commission defined “localized reclaimed water treatment systems” as systems that receive and treat domestic wastewater from a single building, multiple buildings within a single property or area bounded by dedicated streets or ways, or a district designated by a City or County for treatment to produce reclaimed water for beneficial use where the source water does not have meaningful inputs from industrial or other diluting sources. This definition is intended to reflect that localized systems collect wastewater from a more concentrated and defined area as compared to centralized systems.

The Commission adopted a new rule providing that NOAs for use of reclaimed water from localized systems may include requirements for limitations on contributions from non-domestic sources as necessary to prevent pass through, interference or impacts on public health or the environment from those sources. The Commission also adopted a requirement that the user plan to comply for localized systems identify the percentage contributions from each wastewater input to the localized system and the location of the input as well as any limitations on contributions from non-domestic sources.

Treatment Based Framework for Localized Systems

The Commission also adopted a treatment-based framework for localized systems. The framework for localized systems is structured around treatment performance criteria. A treatment-based approach for localized systems helps ensure that systems are designed properly, that public health will be protected despite less frequent sampling and higher degrees of automation, and helps streamline permitting for a variety of small treatment systems throughout the state.

The treatment-based approach utilizes treatment performance-based logarithmic (“log”) reduction targets for the treatment of pathogens in localized systems to meet various risk thresholds. The Commission directs the division to develop a policy (localized system design criteria) that will define treatment credits for various unit processes or alternate demonstration/testing option while discharging to the sewer. Treatment-based approach allows for an automated approach through continuous monitoring, and avoids the need to perform frequent grab samples for *E. coli*, a cost burden that provides little benefit for assessing how localized systems perform in real time.

The Commission considered two different risk levels for localized system log removal targets, and concluded that due to the high risk of unintended cross-connections between potable and reclaimed water plumbing, 10^{-4} risk level (1 infection per 10,000 individuals annually) is appropriate for localized systems treating reclaimed water for Category 3 uses. The Commission concluded that 10^{-2} risk level (1 infection per 100 individuals annually) is appropriate for localized systems treating reclaimed water only for Category 2 uses due to the low risk of exposure from unintended cross connections. The Commission also approved 10^{-2} risk level for enteric viruses only for localized systems treating reclaimed water only for Category 1 uses, again due to the low risk of exposure from unintended cross connections and restricted access limits for on-site uses.

Because localized systems generally lack access to on-site laboratories and more limited staffing, the Commission adopted requirements for continuous treatment monitoring of unit processes with high frequency (on the order of minutes between sample analysis and recording) to ensure those processes are operating to specification. The Commission found that localized systems should be continuously monitored to ensure that treatment is performing as expected.

The Commission decided that localized reclaimed water system treaters should not be required to continuously monitor for *E. coli* because localized systems that treat to the log removal targets adopted by the Commission will meet the *E. coli* limits in section 84.7, so long as the localized system process controls are operated and maintained in accordance with their design as verified by the monitoring of the unit processes. The Commission found that the continuous treatment monitoring process, as well as the initial field verification, will verify that the log removal targets are being met, and that the localized system is meeting the required log removal targets and therefore in compliance with the *E.coli* standard for Categories 1, 2 and 3 reclaimed water. For these reasons, the Commission determined it is not necessary for localized systems to consistently monitor for *E.coli*. Acceptable surrogate parameters for localized systems listed in Table C of Section 84.10, if operating properly and continuously monitored and verified, will result in the log reduction targets in Table B in 84.10 and meet or exceed the standards provided in Categories 1, 2 and 3 of reclaimed water. The Commission approved several surrogates in Table C for monitoring the operation of system process control, and directed the Division to develop a policy approving other acceptable surrogates for continuous monitoring of localized systems.

The type of continuous monitoring should be selected on a system-by-system basis. During the field verification and commissioning study, the treater must confirm that the treatment technologies have been installed in accordance with the approved design and are operating per their specifications. The monitoring approach will be included in the operations and monitoring plan.

The Commission currently intends for localized systems, like centralized systems, to be approved under the site location and design approval process in Regulation 5 CCR 1002-22, and encourages the Division to hold a stakeholder process to consider modifications to Regulation 22 to consider any changes that should be made to address localized systems.

The Commission also adopted a requirement providing that a user include as part of its user plan to comply an affidavit attesting that the user employs a certified operator or an agreement showing that a certified operator has been retained. The Commission determined that this is necessary to ensure that the user is capable of operating the localized system and able to comply with Regulation #84. The report must be certified by the user.

To protect water provider water rights, the Commission adopted language requiring that letters of intent include an affirmation that the proposed installation of a localized system is allowed by the water service provider where the localized system is located in the service area of a water provider.

C. Basis of Requirements for Fixture Flushing

Risk of Exposure to Reclaimed Water from Fixture Flushing

The Commission approved reclaimed water for fixture flushing in multi-family and non-residential structures. The primary risk of exposure to reclaimed water when used for toilet flushing is from unintended cross-connections with potable water plumbing. To minimize risk of exposure to reclaimed water from unintended cross-connections with potable water plumbing, the Commission adopted additional disinfection requirements and cross-connection control requirements.

Disinfection Requirement for Toilet and Urinal Flushing Using Centralized and Localized System Reclaimed Water

A BMP of a minimum of 0.2 mg/L for free or 0.5 mg/L for monochloramines of chemical disinfectant is required within the reclaimed water of premise plumbing of buildings approved for indoor toilet and urinal flushing. This BMP mitigates the potential for *Legionella* exposure associated with indoor uses. The Division may approve alternative disinfection approaches that have equivalent protection against premise plumbing pathogens. The Commission directs the Division to hold a stakeholder process to determine whether similar or different disinfection requirements should be applied to other categories of indoor uses for reclaimed water. The commission also discussed the importance of ensuring a maximum amount of chlorine residual is not exceeded for indoor uses, especially in light of the potential for chlorine boosting to be occurring. The commission felt that the maximum levels required by the International Plumbing Code address the issue, however the commission expects that during the development of future changes to this regulation, the division and stakeholders will consider whether the addition of a maximum chlorine residual level is necessary in this regulation.

Cross Connection Control Requirements for Toilet Flushing

The Commission included a requirement providing that only licensed plumbers may perform maintenance or make modifications to plumbing within structures that use reclaimed water for toilet flushing. Structures using reclaimed water for toilet flushing must maintain signage providing notice that modifications may be performed only by licensed plumbers.

The Commission determined that structures that use reclaimed water indoors must have an approved cross connection control device or method to prevent contamination of potable water distribution systems also serving the structures. In addition, the owner of the structure using reclaimed water for toilet or urinal flushing must conduct testing to detect uncontrolled cross connections by a certified cross-connection control technician prior to initial operation of the system and at intervals thereafter as mandated in the notice of authorization. Additionally, where reclaimed water is used indoors and could be cross connected with other non-potable water supplies, devices must be installed at service connections to protect the higher quality water from accidental contamination from the lower quality water source.

The user must maintain a current diagram of the structure's potable and reclaimed water plumbing. The public should not have access to the plumbing within structures that use reclaimed water indoors. Structures using reclaimed water for fixture flushing must be in compliance with the State Plumbing Code promulgated by the Colorado State Plumbing Board.

The Commission adopted a rule clarifying that use of reclaimed water for indoor fixture flushing is prohibited if after treatment reclaimed water is stored in an outdoor open-air storage structure.

Additional Requirements for Fixture Flushing

To protect public health and ensure a continuity of water supply, the Commission determined that users of reclaimed water for toilet flushing must maintain a backup potable water supply connection in the event of upsets or a failure of a localized reclaimed water treatment system or centralized reclaimed water treatment system.

The Commission also adopted a requirement that users have a protocol to switch to potable water and redirect reclaimed water to the sanitary sewer in the event that the reclaimed water is not in compliance with Regulation #84.

D. House Bill 18-1069

The Commission finds that its modifications to Regulation #84 are consistent with the intent of HB 18-1069, and presents no increase in the potential risk to human health or the environment. The Commission also found that its modifications further facilitate the safe and efficient use of Colorado's limited water resources.

The addition of the use of reclaimed water for toilet and urinal flushing as a Category 3 Standard is authorized by HB 18-1069. This bill authorizes reclaimed domestic wastewater to be used for indoor toilet and urinal flushing if the reclaimed water meets the Category 3 Standard. HB18-1069, Section 3(2)(c)(IV); § 25-8-205.7(2)(c)(IV), C.R.S.

The Commission further found that the bifurcated designation of reclaimed water treatment systems is also within the authority granted by HB18-1069. The bill amends the previous statutory definition of "reclaimed domestic wastewater". HB18-1069, Section 1; § 25-8-103(17.5), C.R.S. However, the bill does not define the reclaimed water treatment systems that would produce reclaimed domestic wastewater. Control regulations may be promulgated to describe requirements and standards that will encourage the reuse of reclaimed domestic wastewater. See HB-1069, Section 2(1)(f); § 25-8-205(1)(f), C.R.S. Centralized systems are the default reclaimed water systems that were encompassed by the prior Regulation 84 definition of "treater". The Commission found that the addition of "localized systems" as another type of treatment system that would also produce reclaimed domestic wastewater would encourage the use of reclaimed domestic wastewater, consistent with the declaration in HB 18-1069.

The other substantive changes to the regulation describe treatment, filtration, disinfection, monitoring, and other technical requirements. The Commission determined that the addition of these requirements are consistent with the authority granted by HB18-1069. The bill requires wastewater to "at a minimum" receive secondary treatment with filtration and disinfection in order to meet a Category 3 Standard. HB18-1069, Section 3, subsection (1)(c)(I); § 25-8-205.7(1)(c)(I), C.R.S. However, the bill does not define "secondary treatment," "filtration," or "disinfection". It also does not define or describe the monitoring or technical requirements necessary to ensure reclaimed water meets the requirements for each Category Standard. Control regulations may be promulgated to describe requirements and standards that will protect public health and encourage public use. See HB-1069, Section 2(1)(f); §25-8-205(1)(f), C.R.S. The Commission finds that the requirements adopted herein concerning treatment, filtration, disinfection, monitoring, and other technical requirements strike a proper balance between the objectives of protecting public health and encouraging the reuse of domestic wastewater.

PARTIES TO THE RULEMAKING

1. Denver Water
2. City and County of Denver
3. Aurora Water Department
4. City of Boulder
5. Marijuana Industry Group
6. LivWell Enlightened Health
7. Cannabis Business Alliance
8. Meridian Metropolitan District
9. Metro Wastewater Reclamation District
10. Sand Creek Metro District
11. WaterReuse Colorado

84.27 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE: OCTOBER 7, 2019 RULEMAKING; EFFECTIVE JANUARY 14, 2020

The provisions of sections 25-8-202, 25-8-205(1), and 25-8-208.8, C.R.S., provide the specific statutory authority for adoption of amendments to this regulation. The Commission also adopted, in compliance with section 24-4-203(4), C.R.S., the following statement of basis and purpose.

Basis and Purpose

During the 2018 Colorado legislative session, bills passed and became law regarding the use of reclaimed water for edible crop irrigation (House Bill-1093) and industrial hemp (Senate Bill 18-038).

House Bill 18-1093 establishes water quality standards for irrigation of food crops. House Bill-1093 also requires that *E. coli* standards are not to exceed the *E. coli* standards in the Food Safety Modernization Act ("FSMA"). It became effective on August 8, 2018. It states that "On or before December 31, 2019, the Commission may promulgate rules in accordance with the bills." Senate Bill 18-038 establishes water quality standards for Categories 1, 2 and 3 for irrigation of industrial hemp. It became effective on August 8, 2018. It states that "On or before December 31, 2019, the Commission may promulgate rules in accordance with the bills." The Commission now adds four new categories of approved uses: Irrigation of Commercial Food Crop Growing Operation; Non-Commercial Food Crop Growing Operation; Resident Controlled Food Crop Irrigation; Non-Edible Hemp Irrigation; and Edible Hemp Irrigation, along with BMPs for each use, new inspection and compliance protocols for these uses, new NOA regulations, and new and revised definitions.

I. Definitions

The Commission modified definitions and adopted new definitions in Regulation 84. The following definitions were modified to increase clarity or to achieve consistency with other revisions: "Agricultural Irrigation", "Resident-Controlled Landscape Irrigation", "Treater" and "User." The definition for "Agricultural Irrigation" was amended to include food crops and hemp. The definition of "Resident-Controlled Landscape Irrigation" was changed to be more specific about what a residence is, and to match the new definition of Resident-Controlled Food Crop Irrigation". The definition of "Treater" was amended to include inspectors that work for Treaters to clarify that inspection requirements by the Treater could be completed by an employee of the Legally Responsible Person on the NOA.

The following definitions were added: "Commercial Food Crop Growing Operation", "Covered Produce", "Cultivator", "Edible Hemp", "Flood and Sheet Irrigation", "Industrial Hemp", "Management User", "Non-Commercial Food Crop Growing Operation", "Non-Edible Hemp", "Resident-Controlled Food Crop Irrigation", "Site", "Site Manager" and "Visitor". The new definitions were added to reflect references for the new requirements and approved agricultural uses in Regulation 84.

II. Food Crops

The Commission adopted separate definitions, treatment and best management practice requirements for Commercial Food Crop Growing Operations (e.g. large farms) and Non-Commercial Food Crop Growing Operations (e.g. community gardens, community supported agriculture, etc.). The Commission has relied upon the Food Safety Modernization Act, Produce Safety Rule ("PSR") to differentiate between Commercial Food Crop Growing Operation and Non-Commercial Food Crop Growing Operations. Generally under the PSR, when a farm's average annual monetary value of produce sold during the previous 3-year period is more than a certain inflation-adjusted number (currently \$26,999), the farm is covered by the PSR; if it is below that number, the farm is not regulated by the PSR.

The Commission adopted the same distinction to reduce uncertainty and overlapping requirements for farmers: if the PSR applies to a farm, it is a Commercial Food Crop Growing Operation under Regulation 84; if the PSR does not, it is a Non-Commercial Food Crop Growing Operation. Note, however, the PSR's rules only apply to certain crops that the federal government has determined are most likely to be consumed raw. So a farm that grows wheat may be above the profit threshold, covered by the PSR, and be a Commercial Food Crop Growing Operation under Regulation 84, but none of the PSR's rules would apply to that farm because it only grows wheat.

III. Commercial Food Crop Growing Operations

Colorado House Bill 18-1093, the food crop reclaimed water law, directs the Commission to allow Categories 2 and 3 reclaimed water for the irrigation of Commercial Food Crop Growing Operations.

Under the authority of the Food Safety Modernization Act, the U.S. Food and Drug Administration has established regulations known as the Produce Safety Rule ("PSR"), which establish food and worker safety rules, including for water quality and crops most likely to be eaten raw. Colorado House Bill 19-1114, which became law in 2019 authorizes the Colorado Commission of Agriculture to seek, accept and expend federal funds in order to implement the PSR in Colorado.

The Commission is requiring that Commercial Food Crop Growing Operations comply with the applicable portions of PSR, 21.C.F.R. Part 112 [84.9(A)(29)], along with a number of additional conditions in 84.9(A) relating to signage, education, and public access. Under the PSR, reclaimed water would be treated like other non-potable water sources for covered produce under the PSR. The PSR has specific requirements for personnel qualifications and training, health and hygiene, water quality requirements and testing, growing, harvesting, packing and holding activities, compliance and enforcement provisions and equipment, tools, buildings and sanitation requirements. Additionally, the PSR does not allow irrigation of sprouts with water at the quality of Categories 2 or 3.

The Commission has determined that implementation of the PSR for Commercial Food Crop Growing Operation, rather than adoption of a fully separate regime for reclaimed water at these farms, will create no greater risk to public health or the environment than previously authorized uses if implemented properly and fully along with implementation of the requirements in Regulation 84. The Commission acknowledges that some crops are not considered to be eaten raw and are not covered under the PSR. These crops will still be required to implement the additional conditions in 84.9(A) described below for Non-Commercial Food Crop Growing Operations.

The Colorado Department of Agriculture is planning on conducting a rulemaking in the coming years to incorporate the federal PSR into its state regulations. The Commission included the term "applicable" in 84.9(A)(29) to convey that not all provisions of the PSR, as implemented by the State of Colorado, may be relevant to Regulation 84. Once the Colorado Department of Agriculture adopts such regulations, the Division may request a written-only rulemaking to incorporate references to those new regulations into Regulation 84 to better align the state PSR with Regulation 84.

In addition to the PSR requirements, the Commission is requiring education and training for employees, cultivators and visitors for sites irrigating Commercial Food Crop Growing Operations with reclaimed water [(84.9(A)(13)]. Education and training include, at minimum, that non-potable reclaimed water is being used, it is not suitable for drinking, information about the best management practices and that produce should be washed with potable water and/or water with no detectable generic *E. coli* after harvesting produce and prior to consuming produce. Additionally, a hand washing station and/or hand sanitizer containing at least 60% alcohol must be readily available at the Site, and education per 84.9(A)(13) must state that hands and produce should be washed with potable water as soon as it is accessible, and that hand sanitizer is not equivalent to washing hands and produce with potable water. [84.9(A)(17)].

The Commission required that harvesting and public access shall be prohibited in areas where irrigation is occurring resulting in wet soils and/or crops [84.9(A)(21)]. These requirements will reduce the potential for ingestion, inhalation and dermal exposure to pathogens and will protect Users, Cultivators, employees and Visitors against potential illness.

IV. Non-Commercial Food Crop Growing Operations

The Commission adopted additional requirements for Non-Commercial Food Crop Growing Operations because there will be not be oversight under the PSR at these sites, and the general public is more likely to be interacting with irrigation water, soils and food crops at these sites. The Commission has determined that the level of reclaimed water treatment approved on November 6, 2018 for the use of toilet and urinal flushing (84.8, referred to here as "Category 3 Plus") will also be required for Non-Commercial Food Crop Growing Operations and Resident- Controlled Food Crop Irrigation. Category 3 Plus reclaimed water treatment removes more pathogens and particulates than Categories 1, 2, and 3. In the 2018 toilet and urinal flushing rulemaking, the Commission adopted the more stringent Category 3 Plus treatment requirements to address the risk of a person accidentally ingesting up to 2 liters of the reclaimed water per year from cross connections within buildings. The Category 3 Plus treatment requirements are based off of, yet not identical to, California Title 22 Disinfected Tertiary reclaimed water whereby the treatment requirements were established through a microbial risk assessment ("MRA"). California's Disinfected Tertiary reclaimed water is considered appropriate to irrigate food crops that are commercially processed and non-commercially processed.

Despite the additional treatment, the Commission recognizes that there is a risk of using Category 3 Plus reclaimed water for the use of food crop irrigation. Wastewater streams contain varying pathogen loads, and an MRA has not been conducted in Colorado. In addition, the Commission is not requiring any kind of disinfection residual or disinfection flushing in the reclaimed water distribution system, meaning that the pathogen load in the water at a Non-Commercial Food Crop Growing Operation site has the potential to be higher than it was at the treatment plant's point of compliance. Nor is the Commission generally requiring *E. coli* monitoring at those Non-Commercial Food Crop Growing Operation sites (with the exception of some BMPs, see below), meaning that the pathogen loading at those sites is likely to remain unknown. In sum, at this time, local data does not exist to accurately assess the risk of using Category 3 Plus reclaimed water to irrigate Non-Commercial Food Crop Growing Operation. Therefore, the Commission has worked to mitigate against some of these unknown risks through the imposition of BMPs.

The Commission adopted a BMP that for sites that use hoses for reclaimed water irrigation, one supervising adult must be present with children in eighth grade and younger to oversee the appropriate use of reclaimed water use for each active hose/hose spigot. The Commission also required that children in eighth grade and younger must be supervised by an adult that has undergone training per 84.9(A)(13). Youths that are in ninth grade and older may be on a site without supervision only if they have received training per 84.9(A)(13). These requirements were established to ensure that children working in a garden will have adequate supervision. Supervision is needed to ensure that these children do not eat food directly out of the garden without washing it, follow handwashing or hand sanitizer protocols, and that children properly use hoses. The Commission determined that these requirements will help to minimize risk of potential illness for children. This restriction contains allowances for large sites and would not apply at all if the reclaimed water at the site is shown to meet the Category 3 standard for a year (no *E. coli* detected in at least 75% of the samples within a month, no sample exceeds 126 cfu *E. coli* per 100 mL. [84.9(A)(19)]).

The Commission also adopted the PSR's restrictions on the irrigation of sprouts at Non- Commercial Food Crop Growing Operations [84.9(A)(22)]. The Commission adopted this restriction because the warm and humid conditions used for sprouting are uniquely ideal for the growth of bacteria, including *Salmonella*, *Listeria*, and *E. coli*.

The Commission required that potable water supplies and soap or hand sanitizer (if allowed by the PSR) be on or near a site using reclaimed water for Cultivators and Visitors to be able to wash their hands after harvesting crops and/or being present on the Site. This requirement is necessary to prevent hand to mouth ingestion of pathogens and is protective of public health. This requirement does not apply to Resident-Controlled Food Crop Irrigation because a residence must have a potable water spigot on the exterior of the residence [84.9(A)(17)].

The Commission decided that if *E. coli* and/or turbidity standards exceed the required standards in Regulation 84 at Point of Compliance, Treater shall notify the Legally Responsible Entity or person, and the Legal Responsible Entity or person must notify all Site Managers and Management Users [84.9(A)(33)]. Users should be informed that water quality standards are not being met to take proper precautions while continuing to use reclaimed water to irrigate.

The Commission adopted the provision that hose bibs must be inaccessible when they are not in use to prevent any person(s) that are not a trained user to potentially collect water for drinking purposes [84.9(A)(18)].

The Commission adopted more frequent inspection requirements for Non-Commercial Food Crop Growing Operations, as well as a new role (Site Manager) to ensure proper implementation and enforcement of Regulation 84 [(84.9(A)(34))]. The initial inspection by the Treater prior to beginning irrigation is to ensure that all of the proper best management practices are set up and in place for irrigation (e.g. appropriate signage, marked appurtenances, lock box for hose bibs, etc.) The second inspection that must occur after irrigation has started within 30 days of the first inspection is required to ensure that the practices and requirements that were verified in the initial inspection are being implemented. Site Manager inspections are required every two weeks to continue to ensure that best management practices and requirements are being met throughout the entire irrigation season. Both inspections by the Treater, and frequent inspections by the Site Manager help to ensure that implementation of the requirements in Regulation 84 are being met to protect public health and the environment.

Due to the fact that some Division inspections of Non-Commercial Food Crop Growing Operation Sites (like for community gardens) may take place when there is not a representative of the user or treater present at the site, the Commission added a provision to identify the process for an authorized representative from the Division to also submit inspector credentials before any inspection upon issuance of the NOA, as required by CRS 25-8-306, [84.9(A)(32)]. If persons are present at the site at the time of the inspection, the Division representative would also be required to present their inspector credentials at the time of the inspection.

V Resident-Controlled Food Crop Irrigation

The Commission also adopted a number of unique requirements for Resident-Controlled Food Crop Irrigation, because of the specific management and compliance challenges of this structure.

The Commission required that a Management User must be designated to carry out responsibilities and conduct inspections. The Management User must be knowledgeable about the requirements in Regulation 84 in order to enforce the regulation and take action on violations of the regulation. The Management User could be a Homeowners Association representative, Condominium Association representative, landlord, etc. [84.9(A)(26)]. The Commission decided to require this to ensure the tiered oversight approach was applied to Resident-Controlled Food Crop Irrigation sites for protection of public health and the environment.

The Commission required that Management Users provide all property owners and renters with an educational manual and verbal education prior to a new resident occupying the residence. The education requirements are the same as those required in [84.9(A)(13)]. The property owner and/or renter must sign a document acknowledging that they received education, and the Management User must keep copies of the signed documents on site. If a property is sold or rented to another User, the new residents must receive the same education and sign the acknowledgement document [84.9(A)(27)]. The Commission felt that this was the most adequate way to ensure new tenants are aware that non-potable water is being used to irrigate, and to make them aware of the safety protocols to implement to minimize risk at residential sites.

The Commission required that a potable water supply spigot be available on the exterior of the residence so that potable water can be used should the Treater's reclaimed water not meet the water quality standards in Regulation 84 at any point in time [84.9(A)(24)].

The Commission adopted a provision that Management Users must maintain up to date maps and/or records of the locations, number and acreage of sites where reclaimed water is being used to irrigate food crops and landscapes, and update the Treater of this information annually [84.10(B)(2)(a)(ii)]. The Commission understands that the Division will work with Management Users regarding how to calculate acreage and agronomic rates in a streamlined manner. Working with the Management User may include considerations of variances regarding these calculations.

VI. Hemp

The Division met with hemp workgroup stakeholders to discuss irrigation of edible and nonedible hemp and the hemp industry recommended the following: Category 1 reclaimed water only be used for rotational crops which are crops used to reduce soil erosion, increase soil fertility and increase crop yield for the next crop to be grown; Categories 2 and 3 reclaimed water to be allowed for irrigation of hemp to be used for fiber products; and Category 3 Plus to be allowed for irrigation of hemp to be used for edible and dermal products. Hemp stakeholders also recommended that clones not be irrigated with reclaimed water [84.9(A)(22)]. The Commission adopted these recommendations.

The Commission required that potable water supplies and soap or hand sanitizer be on or near a site using reclaimed water for Users and Visitors to be able to wash their hands after harvesting crops and/or being present on the Site. This requirement is necessary to prevent hand to mouth ingestion of pathogens and is protective of public health. The Commission also required that if the hand washing supply is a portable hand washing station, the used water must be disposed of in an area whereby it will not come into contact with the crops, soils or infiltration into soils near crops because this is a requirement in the PSR. Also, the portable hand washing station must stay adequately full of potable water for Users [84.9(A)(17)].

The Commission required that harvesting and public access shall be prohibited in areas where irrigation is occurring resulting in wet soils and/or crops [84.9(A)(21)]. The Commission also added a requirement that harvesting of produce not occur where irrigation is occurring and making the soil and/or plant wet [84.9(A)(21)]. These requirements will reduce the potential for ingestion, inhalation and dermal exposure to pathogens and will protect Cultivators, employees and Visitors against potential illness.

VII. Additional Discussion Applicable to Multiple New Uses

A. Application of Basic BMPs to All New Uses

The Commission applied a number of basic BMP similar to existing BMPs to all of the new uses, including the following: leaks in the irrigation system or hoses must be repaired immediately to avoid ponding and runoff and irrigation in excess of the agronomic rate [84.9(A)(25)]; a manual or display must be located at each of the reclaimed water sites; education and training must be conducted that is specific to each use; signage must be placed at specified distances throughout the site; all irrigation equipment and hoses must indicate that non-potable water is being used [84.9(A)(16), does not apply to resident-controlled]; and a ban on flood and sheet irrigation because it could result in an exceedance of irrigation at the agronomic rate [84.9(A)(30)].

B. Tiered Approach to Oversight for New Uses

The Commission adopted a tiered approach to oversight for Non-Commercial Food Crop Growing Operation and Resident-Controlled Food Crop Irrigation. The Division, the Treater and the Site Manager or Management User (for Resident-Controlled) each have oversight, authority, general and inspection responsibilities. Each tier of oversight has the authority to lock/disconnect the hose bibs, or terminate service of reclaimed water when a User is in violation of Regulation 84 [84.10]. This tiered approach will help to ensure that best management practices are being implemented, and provide a blanket of protection for public health and the environment.

C User Plan to Comply Requirements

The Commission adopted new User Plan to Comply Requirements for the new agricultural uses. The User Plans to Comply for the new uses require descriptions of how Users, Site Managers and Management Users intend to comply with the best management practices and adhere to the responsibilities and inspections required in Regulation 84 [84.12(D-G)]. Adding the new User Plan to Comply requirements sets forth the expectations by the Division and the Commission for the new uses and binds users to the requirements in the User Plan to Comply and NOA to protect public health and the environment. Should a user violate the requirements in the User Plan to Comply and the NOA, enforcement action can be implemented by the Division.

D. Metals Reporting

Based on stakeholder concerns regarding metals uptake in hemp, the Commission adopted a BMP for all food crops and hemp that a User may request and receive from a treater reclaimed water monitoring data that is less than 12 months old for nickel, arsenic, lead, cadmium and/or mercury concentrations.

D. TDS

For all new uses except hemp, the Commission adopted a requirement for Treaters to monitor and report TDS data to the Division in their Discharge Monitoring Reports on a quarterly basis, and email this data to all users for the new Food Crop users [84.9(A)(14)]. The Commission finds that Users and Cultivators that are irrigating food crops with reclaimed water will benefit from this information to determine if they want to use reclaimed water to irrigate crops and/or to determine which crops to grow according to plant specific TDS sensitivity. Reporting TDS or other pollutants through DMRs does not create any basis to imply that the use of reclaimed water is a discharge to state waters; rather the DMR system will be used for administrative purposes.

84.28 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE: AUGUST 10, 2020 RULEMAKING; EFFECTIVE SEPTEMBER 30, 2020

The provisions of sections 25-8-202, 25-8-205(1), and 25-8-308(1)(h), C.R.S., provide the specific statutory authority for adoption of amendments to this regulation. The Commission also adopted, in compliance with section 24-4-203(4), C.R.S., the following statement of basis and purpose.

Basis and Purpose

Recognizing the importance of reclaimed water as a resource within the State of Colorado's Water Plan as a means to help offset the demand on other water resources, the Commission considered and adopted changes to Regulation 84 on August 10, 2020 to include Oil and Gas Operations as an approved use under use categories 2 and 3.

Oil and Gas Operations is a growing industry within Colorado and as the industry expands in Colorado, it is creating opportunities for municipalities, such as the City of Aurora, to provide alternative water supplies beyond those typically used by the industry. The Commission acknowledges the use of reclaimed water can help reduce the demand on other sources, such as groundwater and surface water, that can more readily be utilized for potable purposes. As such, the Commission is adopting several changes to Regulation 84 that will regulate the use of reclaimed water within Oil and Gas Operations processes. The changes are an important step toward furthering the goals of the State's Water Plan while ensuring the protection of public health and environment. The changes include several new definitions, new Additional Conditions to address the use of reclaimed water within Oil and Gas Operations, and new requirements to address user plans to comply for specific oil and gas operation sites.

I. Definitions

The Commission has included two new definitions; one for the new use category of "Oil and Gas Operations" and one for "lay flat hose". The "Oil and Gas Operations" definition is meant to build continuity between regulations, and clarity on what is included in the new use category. "Lay flat hose" is a common hose used within the oil and gas industry that can be useful for Treaters to provide a temporary distribution system for users. Several new best management practices (Additional Conditions) have been introduced within the regulation surrounding how reclaimed water is used by approved Users. The new definitions were added to reflect references for the new requirements and approved industrial uses in Regulation 84.

Section 84.5 (28) - Lay Flat Hose is a staple for industries to transport liquids quickly, efficiently, and timely for temporary events. Oil and gas operation's is a growing industry within Colorado that has unique demands on water such that they often require very large volumes of water for a short period of time, and disposal after usage removes the water from the natural water cycle. For instance, a site may need 9 – 12 million gallons of water over a period of 5 – 7 days to complete a single well. The demand for water to any given Oil and Gas Operations site ends up being temporary in nature; therefore, the infrastructure necessary to deliver the water also tends to be temporary in nature as opposed to more permanent infrastructure. The use of temporary lay flat hose helps to deliver the water supply, but also helps reduce road traffic and minimize environmental impacts that would result from the multitude of trips necessary to deliver large amounts of water over a short period.

Section 84.5 (37) - The definition of Oil and Gas Operations replicates the definition adopted by the Colorado Oil and Gas Conservation Commission (COGCC) Rule 100 Series - Definitions. This develops continuity between the regulations, which will be helpful to all parties involved with this regulation, since COGCC regulations will oversee the disposal of used reclaimed water from Oil and Gas Operations Users.

Section 84.5 (46) – The definition of Site was modified to include conveyance and storage, under the operational control of the user. This was necessary since temporary conveyance systems could be used by Oil and Gas Operations and other approved uses.

II. The commission approved the new use of Oil and Gas Operations and added it to section 84.9 Table A under Industrial uses. This requires the User to manage the reclaimed water in accordance with a Notice of Authorization under Regulation 84. Oil and Gas Operations primarily intends to use reclaimed water as the base liquid for drilling muds or producing hydrologic fracturing fluids for injection down hole. Category 2 and Category 3 water are allowed for this new use. Category 1 water will not be allowed for this new use.

III. The Commission included several Additional Conditions specific toward the use of reclaimed water within the use category of Oil and Gas Operations.

Section 84.9 (A) Additional Conditions Required, was revised with the following modifications:

Section 84.9 (A) (13) added an Additional Condition requiring advanced training of staff prior to their initial shift and annually thereafter. This is protective to the staff by informing them that reclaimed water was being used on site and the procedures they need to follow to be safe when working with reclaimed water. The training would include implementing Additional Conditions and the requirements in the User Plan to Comply (UPC).

Section 84.9 (A) (16) The signage Additional Condition was modified by removing the phrase “to irrigate crops”. This modification removes this narrow interpretation that this Additional Condition is only applicable “to irrigate crops”. This Additional Condition can be applied to a majority of approved uses and can protect the public through notifications that reclaimed water is used at the location.

Section 84.9 (A) (37) Additional Conditions for lay-flat hoses, couplings, and other appurtenances were created for lay flat hose deployment and usage. Lay flat hose will be installed in accordance to industry standards for integrity utilizing hydrostatic pressure testing procedures. The requirement includes cross-connection control methods be implemented when connecting to other water sources. The User is required to install and maintain leak detection equipment on the lay flat hose and perform daily inspection of the entire transmission line for spill prevention and countermeasure. The hose will be marked as non-potable water transmission line and signage, identifying the liquid being transmitted within the hose, is required at the mid-point of each section of hose or approximately every 350 feet. These requirements serve to notify the public, Users, and Treater about the content within the hose. These preventive and notification requirements are industry standards that are required during installation of more permanent pipelines and applicable to temporary conveyance systems. The signage and labeling requirements protect the public by informing them of the contents of the hose and notifying them that it is non-potable water.

Section 84.9 (A) (38) Additional Conditions for vehicles and tank trailers were created for hauling reclaimed water. The requirement includes cross-connection control methods that must be implemented when loading the tanker, labelling the tanker as containing non-potable water, and spill reporting requirement. These requirements will protect other water supplies that maybe accessed by the hauler and protect the public by notifying them of the contents in the tank. The potential for spills exists with any transfer or transportation operation, hence the requirement for reporting a spill as required by CRS §25-8-601(2).

Section 84.9 (A) (39) An additional Condition for delivery through temporary conveyances was created to reiterate the requirement that the conveyance system needs to comply with the definition of lay-flat hose. The conveyance shall be deployed utilizing the industry standards identified in the definition of lay-flat hose and the associated Additional Condition. This clarifies that the temporary conveyances shall be protect the environment by following the industry standards and that the public will be able to identify the contents in the conveyance.

Section 84.9 (A) (40) An Additional Condition for disposal of reclaimed water was created for managing the disposal of reclaimed water from any storage, conveyance or other source. The User is required to dispose of reclaimed water in a manner that doesn't create a point source discharge of pollution into State Waters or is a reportable spill as specified in §25-8-601(2) CRS. This requirement protects the environment and public by advising the User of the need to properly dispose of any excess reclaimed water or to obtain a permit for a point source discharge.

Section 84.9 (A) (41) The Additional Condition for notification of conveyance deployment, usage, or removal requires the User to notify the Division and Treater when a temporary conveyance is being used or is being withdrawn for service. This notification allows the Treater to manage the reclaimed water by knowing when and where reclaimed water is used and to schedule compliance activities as necessary. The Division would receive the notification for use in scheduling their compliance activities.

Section 84.9 (A) (42) The Additional Condition for analyzing reclaimed water for microbial characteristics upon delivery to the site and during storage on the site. Though any water received on-site is subjected to microbial analysis, this requirement will be protective of the infrastructure installed to the formation and the formation environment by reducing the risk of microbial contamination.

- IV. The Commission adopted specific treater and site manager requirements for the Oil and Gas Operations use category to ensure responsibilities and expectations are clear between the Treater and the User.

Section 84.10 (D) was added to detail the responsibilities of the Treater and Site Manager of Oil and Gas Operation sites. The Treater is responsible for reviewing the User Plan to Comply (UPC) for completeness, accuracy, recordkeeping, inspections, and implementation of Additional Conditions. The Site Manager is responsible for adherence to NOA and UPC requirements. Specifying the responsibilities supports the overall hierarchal structure of Regulation 84 and clearly identifies accountability of the parties involved with managing reclaimed water.

Section 84.12 (J) was added to provide specific requirements in the User Plan to Comply for Oil and Gas Operation sites. These include, contact information, description of how and where reclaimed water is used, cross-connection control requirements, hydrostatic testing requirements for temporary lay-flat hose or pipelines, and labelling requirements for temporary lay-flat hose or pipelines. This requirement was developed by modifying the requirements in Section 84.12 (B) and adding details specific to Oil and Gas Operations. The baseline information is the same for all Users, however the specifics associated with conveyance systems and labeling temporary lay flat hose or pipelines is necessary to protect the environment and notify the public.

84.29 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE: MAY 9, 2022, RULEMAKING; EFFECTIVE AUGUST 14, 2022.

The provisions of sections 25-8-202, 25-8-205(1), and 25-8-205.8, C.R.S., provide the specific statutory authority for adoption of amendments to 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 Commission adopted Regulation 84 in October 2000 with the scope of the regulation being the use of reclaimed domestic wastewater for landscape irrigation. Since its initial passage, there have been seven rulemaking proceedings to incorporate eighteen additional use applications in addition to administrative and clerical changes. These changes have resulted in requirements being added for a variety of purposes over time, providing the Commission with an opportunity to revise, modify and improve the regulation for readability, clarification, compliance, and implementation purposes.

I. Restructure of the Regulation

The Commission restructured the organization of the regulation to improve readability and comprehension of the requirements.

II. Consolidation of Regulatory Requirements

The Commission found that Regulation 84 contained significant amounts of repetition and redundancy. Many requirements pertained to multiple or all uses but were worded differently or located in different sections. Furthermore, the previous regulatory format contained a section titled "User Plan to Comply Requirements" (formerly section 84.12) and the listed requirements were intended for Users to enumerate how they would comply with regulatory mandates in the User Plan to Comply (now termed User Application and Site Management Plan, or UASMP). The Commission determined that the previous User Plan to Comply requirements could be reworded and embedded in the "Implementation Requirements" section (84.10, formerly 84.9(A) - Additional Conditions), and that the UASMP would prompt Users to detail how they would comply with these mandates. Many of the Additional Conditions (now Implementation Requirements) were consolidated when applicable to all uses contained in section 84.10(A). Any requirements for a specific use that could not be consolidated were placed under their respective uses in section 84.10(B).

III. Regulatory Clarifications

The Commission determined that there were multiple areas of the regulation that could be more explicit, and added more detail to improve the clarity of Treater and User expectations and improve compliance and implementation of regulatory requirements. The Commission also made additional changes to better clarify intended rules and conditions.

A. Applicability

The Commission added language to the "Applicability Section" 84.4 to explicitly list authorized uses of reclaimed water, and to state that reclaimed water use for any purpose not listed in the regulation is prohibited. This language specifies that if unauthorized use of reclaimed water occurs, it would be a violation of the regulation. This added language clarifies the reclaimed water uses allowed and the consequences of using reclaimed water in an unauthorized manner.

The Commission also added language to section 84.4 that indicates if a Treater or User Authorization contains a variance (per section 84.12, formerly section 84.14), the conditions of that variance will be included in the Authorization. This is to clarify that a Treater or User Authorization may have conditions in the Authorization that may differ from certain areas of this regulation.

B. Definitions

The Commission modified, deleted and added definitions. "Agricultural Irrigation" [84.5(1)] was modified to include "Non-food Crop Irrigation and Silviculture". The Commission considered the definitions for "Agricultural Irrigation User", "Commercial User", "Industrial User", and "Landscape Irrigation User" redundant and these definitions were removed. The Commission determined that the definition of "User" [84.5(57)] would be modified to encompass the intended meaning of these specific User type definitions. "Approved Cross Connection Control Device or Method" was removed and definitions of "Backflow Prevention Assembly" [84.5(4)] and "Backflow Prevention Method" [84.5(5)] were added to be consistent with Regulation 11. The definition of "Transmission System" was deleted and replaced with "Reclaimed Water Distribution System" [84.5(42)] to better reflect the intent of the definition.

Definitions with references to other Commission regulations were updated to the proper series in the Colorado Code of Regulations (CCR) for consistency and accuracy purposes for the following terms: Certified Cross-Connection Control Technician [84.5(9)], Certified Operator [84.5(10)], Commercial Food Crop Growing Operation [84.5(11)], Non-Commercial Food Crop Growing Operation [84.5(32)], Potable Water [84.5(40)] and Secondary Treatment [84.5(48)]. Additionally, the definitions for Commercial Food Crop Growing Operation and Non-Commercial Food Crop Growing Operation pertained to whether the agricultural farm was covered under the Food Safety Modernization Act, Produce Safety Rule, 21 -CFR § 112.4. On October 30th, 2020 the Colorado Department of Agriculture's Rules Pertaining to the Administration and Enforcement of the Produce Safety Act, 8 CCR 1202-17, became effective, and the Commission resolved to differentiate these definitions by referencing this state regulation.

The Commission modified the definitions of "Fire Protection - Nonresidential" [84.5(19)] and "Fire Protection - Residential" [84.5(20)] to reflect the fact that nonresidential and residential fire hydrants coexist in neighborhoods and throughout reclaimed water service areas. The definition of "Site Manager" [84.5(50)] was amended to include trained workers. Additionally, the Commission clarified that Site Managers have the legal ability to "request that" Treater's discontinue service to Sites with violations. The original language stated that Site Managers have the legal ability to "have the Treater terminate service" which is inaccurate.

The Commission added multiple definitions to bring clarity to areas of the regulation. The definition of "Implementation Requirements" [84.5(22)] clarifies that these practices and conditions are mandated and that Treater's and Users are required to adhere to these. The definition of "Legally Responsible Individual" [84.5(27)] was added to assist Users in understanding who to assign this responsibility to on their application. The Commission added a definition for "Non-food Crop Irrigation and Silviculture" [84.5(36)] because all the other agricultural irrigation uses were clearly defined, and to bring clarity to the applicability in comparison to the other agricultural uses. The Commission determined that providing a definition for "Repetitive Violation" [84.5(43)] in conjunction with additional enforcement requirements for Treater's would assist Treater's and Users in understanding what is a violation of Regulation 84, and when and how enforceable actions should be taken by Treater's. Per stakeholder requests, the Commission added a definition for "Reuse System Management Plan" [84.5(47)], "State Waters" [84.5(51)] and "Zoo Operations" [84.5(61)] for clarification purposes.

C. Terminology

The Commission modified and added terminology for clarity purposes. The term "Notice of Authorization" has been used interchangeably for both Treater's and Users. The Commission determined that it would be clearer to specify whether an authorization pertained to a Treater or a User and therefore replaced "Notice of Authorization" with the terms "Treater Authorization" and "User Authorization". The Commission also made changes to terms pertaining to the applications to treat and use reclaimed water. The term "Letter of Intent" was changed to "Application to Treat and Distribute Reclaimed Water" or "Treater Application." The term "User Plan to Comply" was changed to "User Application and Site Management Plan (UASMP)." UASMP is a more appropriate term for User applications. In addition to the document being used by the Division to determine whether to issue an authorization to a User, by default, the document has also been used as a Site management plan that Users reference to implement regulatory requirements, allowing the Division to ensure compliance when conducting inspections.

The Commission replaced the term "Additional Conditions" with "Implementation Requirements." The term "Additional Conditions" was often interchangeable with "Best Management Practices" or "BMPs" throughout the regulation and caused confusion among Users as to whether the conditions or practices were actually required.

D. Clarifications for Treaters

The Commission made multiple changes and additions to the section that pertains to Treaters. Most of these clarifications are contained in section 84.6(F). Any changes that require updates in Treater Authorizations, Reuse System Management Plans and other changes are required to be completed within two years from the effective date of this rulemaking.

Section 84.6(F)(2) lists the information in the UASMPs that Treaters must review and ensure is accurate prior to submitting them to the Division. In 2004, the Commission adopted provisions requiring Treaters to provide the Division with a “User Plan to Comply” for each User and each use prior to receiving authorization to provide reclaimed domestic wastewater. It was the intent of the Commission for Treaters to review the UASMPs (former User Plans to Comply) and submit them to the Division directly. This additional language clarifies the original intent of the Commission.

Maintaining copies of authorizations issued to Users has always been a responsibility of Treaters. Section 84.6(F)(3) clarifies that copies of UASMPs for Sites where reclaimed water is currently being used must be maintained, and copies of previously effective UASMPs must be retained for three years. The Commission adopted a three-year record retention period in case questions or concerns regarding the User and the Site should arise even after the User is no longer authorized.

Regulation 84 requires that Treaters conduct an annual education program for all Users. The Commission added section 84.6(F)(4) to specify the conditions and information that must be provided in the education program. Some of the education requirements that formerly applied to specific uses have been carried into the Treater’s education program.

Treaters have been required to oversee the use of reclaimed water by Users to ensure, to the maximum extent practicable, that Users attain and maintain compliance with this regulation. Treaters have been responsible for conducting inspections of their Users and reporting inspection results to the Division [84.11(A)(1) and 84.11(B)(2)]. The Commission resolved to clarify this requirement by directing Treaters to develop and maintain adherence to an Enforcement Escalation Plan [84.6(A)(6)(c) and 84.6(F)(5)]. The Commission determined that this would result in a better mutual understanding of the consequences for Users who violate this regulation, and for the Division to issue compliance actions for Treaters who do not maintain adherence to their Enforcement Escalation Plans. Additionally, the Commission clarified that Treaters shall maintain records of inspections, non-compliance determinations and corrective actions for inspections for at least three years for Division review [84.6(F)(7)]. The definition of “Repetitive Violation” [84.5(43)] was added to assist Treaters in developing the Enforcement Escalation Plan and enforcement actions, and for Users to understand what it means to violate Regulation 84.

The Commission added the following requirement under the former “Additional Conditions” section 84.9(31) during the 2019 rulemaking:

“The Treater and the User shall furnish to the Division, within sixty days, any information which the Division may request to determine whether cause exists for modifying, revoking and reissuing the NOA, or to determine compliance with this regulation or the applicable NOA.”

The Commission moved this requirement to 84.6(F)(14) since it pertains to Treaters. Furthermore, this requirement has always been in Treater NOAs in Part II, section B.2.

Regulation 84 always prohibited supplementing reclaimed water with potable water and other water sources unless proper cross connection controls are intact. These requirements were formerly listed under the “User Plan to Comply Requirements” in sections 84.12(H)(7) and 84.12(H)(9). The Commission moved the requirements to section 84.6(F)(12) and 84.6(F)(13), and added a requirement for Treater to describe how they comply with these cross connection controls in their reuse system management plan in section 84.6(4)(e). Furthermore, the Commission determined that when supplementing reclaimed water with potable water, it was clearer to reference the controls mandated in Colorado Primary Drinking Water Regulations 5 CCR 1002-11 (Regulation # 11). An Implementation Requirement for cross connection is also listed in the User section so Users are aware that Sites must be in compliance 84.10(A)(1).

Treaters are required to submit information to the Division requesting amendments to their Treater Authorization [formerly section 84.6(A)(7)]. The Commission clarified that this is required for the following additional reasons: a facility contact or Legally Responsible Individual change, termination of the reclaimed the authorization and when there is a transfer of ownership or operational control in sections 84.6(E)(7)(a), 84.6(E)(7)(d) and 84.6(E)(7)(e), respectively.

E. Clarifications and Additional Consolidation of Requirements for Users

Most of the consolidation changes that the Commission made pertained to requirements for Users. The Commission consolidated regulatory conditions where possible to improve readability and comprehension of Regulation 84.

The requirements for applications to use reclaimed water were not explicitly listed in the former regulation. The Commission dedicated section 84.9 for Users so they understand the expectations for applying and receiving a User Authorization. Users will be required to submit a UASMP to receive approval to use reclaimed water. Existing UPCs and Notices of Authorizations for Users that are authorized would remain effective, and a new UASMP would not be required until:

- The Division develops and publishes the new UASMPs on the Division’s permits website, and
- The Division initiates a renewal schedule for Treater and their Users pursuant to proposed sections 84.6(D) and 84.9(D), and/or
- The User submits a modification or other change to the User Authorization (former termed NOA) and the new UASMPs are available to be completed.

Treaters and Users must comply with the requirements of the most recent version of this regulation unless otherwise specified. The Commission determined that certain requirements in Colorado’s Plumbing Rules and Regulations (3 CCR 720-1) pertain to some uses of reclaimed water. Where the plumbing code applies, the Commission directed Treater and Users to follow the mandates therein. For uses in which the plumbing codes do not apply, the Commission embedded language that is either similar to or identical to those found in Colorado’s Plumbing Rules and Regulations to be consistent. The Commission added this change with regards to labeling conveyances and appurtenances [84.10(A)(2)] and signage requirements [84.10(A)(4)].

The Commission determined that some conditions that once applied to specific uses should be required for all uses. These conditions are located in section 84.10(A), and the table below shows the current location in the revised regulation, and the location(s) of the requirement(s) in the former version of the regulation.

Table of User Requirements Previous and Current Version Locations

User Requirement	Previous Version Location	Current Version Location
Cross connection control at use Sites	84.12(H)(7), 84.12(H)(9) and 84.12(H)(5)	84.10(A)(1), 84.6(F)(12) and (13)
Labeling of conveyances and appurtenances	84.12(H)(4)	84.10(A)(2)
Education and training	84.9(A)(13) and 84.12(H)(11)	84.10(A)(3)
Signage requirements	84.12(H)(3)	84.10(A)(4)
Requirements pertaining to reclaimed water use areas	84.12(H)(2) and 84.12(H)(1)	84.10(A)(5)
Leak repair	84.9(A)(25)	84.10(A)(6)
Reclaimed water disposal requirement/Spill reporting	84.9(A)(40)	84.10(A)(7)
Operation of the reclaimed water onsite distribution system	84.12(H)(6)	84.10(A)(8)
Vehicle and tank hauling requirements	84.9(A)(38)	84.10(A)(9)
Submission of the UASMP for each User	84.6(A)(6)	84.10(A)(10)
Maintenance of a copy of the UASMP at User Sites	84.10(A)(2)(v), 84.10(C)(2)(i) and 84.10(D)(2)(iii)	84.10(A)(11)
Reporting violations	84.13(C)	84.10(A)(12)
Furnishing information to the Division	84.9(A)(31)	84.10(A)(13)
Requirements regarding impoundments	84.12(H)(10)	84.10(A)(14)

F. General Clarifications

The Commission added other clarifying language regarding the following.

Section 84.6(F)(16) was added to clarify that Treaters are responsible for ensuring Users adhere to the Land Application Discharge requirements.

The Commission determined that it would be beneficial to Treaters and Users to clarify conditions pertaining to uses of reclaimed and land application discharges that are authorized under Regulations 84 and 61. Landscape and agricultural irrigation Users are required to irrigate at the agronomic rate to prohibit discharges to groundwater. Additionally, irrigation Users have the option to use a Colorado Discharge Permit System (CDPS) permit to comply with Regulation 61. Fire protection uses are exempt from the land application discharge requirements when reclaimed water is used in an emergency whereby proper disposal of the water or applying it at evapotranspiration rates would nullify the purpose of the use. However, this does not include land application of reclaimed water for fire protection for any other reason. Land application discharges are prohibited for all other uses. Section 84.10(C) and Table B clearly display these clarifications to help Treaters and Users understand the requirements regarding land application discharges.

Colorado Regulation # 61 (CDPS Regulations) dictates that impoundments containing reclaimed water are subject to either meeting the seepage requirement in Regulation 61.14(9)(a) and thus receive a waiver, or obtain a CDPS permit. This requirement was also formerly located under the User Plan to Comply requirements section 84.12(H)(10). The Commission determined that this requirement should be explicitly stated in Regulation 84 to ensure Treaters (and Users) understand that impoundments must be in compliance with this regulatory requirement (section 84.6(F)(10) for Treaters; section 84.10(A)(14) for Users). Furthermore, the wording for the requirement was modified in section 84.6(F)(10)(a-b) to explicitly state the Commission's intent that Treaters shall ensure that all impoundments containing water originating from the Treaters reclaimed water distribution system are either authorized to discharge under a CDPS permit or have received a waiver based on the seepage rate pursuant to section 61.14(9)(a). When discharged under a CDPS permit to an impoundment, this water is not subject to Regulation 84. The Commission has directed the Division to ensure compliance with this requirement in Regulation 84. Treaters have five years from the effective date of this regulation to comply. Impoundments that do not have a seepage waiver or a CDPS permit on the effective date of this regulation will still be in violation of Regulation 61.14(9)(a), but will have up to five years to be considered in violation of Regulation 84.

IV. New Conditions and Requirements

A. Division Review and Issuance of Authorizations

The Commission revised the review period for the Division to review Treater Applications and UASMPs from 30 days to 60 days. Given the complexity of the new uses added during recent rulemakings and the addition of localized systems, the Division will need more time to carefully review applications. The Commission also added a provision to allow the Division to provide public notice of applications and authorizations when needed. The Division has received requests for the applications to be more public and transparent. Since the Commission allows public notice for other types of permits issued by the Division, this requirement is consistent with other regulations and processes. The Division will use their standard notification language stating that an Authorization is up for public comment. The Division will notify and work with Treaters during the review, renewal and public notice process when conducting these assessments on their respective Users.

Additionally, the Commission resolved to add language regarding reasons for denying a Treater or User authorization. Authority to deny authorizations based on risks to public health and the environment has always been entrusted to the Division, and the Commission concluded that this should be explicitly stated in the regulation.

B. Authorization Renewal and Modification

The Commission found it important to direct the Division to review Treater and User authorizations for renewal for several reasons. While Regulation 84 becomes active upon implementation, User and Treater compliance is improved when authorizations are consistent with the regulatory requirements and applicable regulatory sections for which the authorizations reference. These are subject to change with future rulemakings. Secondly, renewing authorizations will help ensure that the contact information is up to date, thereby improving compliance with the regulation and the Division's ability to contact the appropriate representatives for the Treater facilities and User Sites. Third, and specifically with regards to Users, periodic renewals of authorizations will require Treaters to engage with their Users which should result in better education about the regulation, raise awareness about the regulation and requirements to use reclaimed water, and thereby help to improve compliance on User Sites and amongst Users.

The Division will work with Treaters and Users to determine a renewal compliance schedule that is viable given the current Treater, User and Division resources at the time. The Division will develop guidance that includes a timeline and/or circumstances that would initiate a renewal. Circumstances that could be included in guidance are:

- Prioritization of Authorizations that pose higher public health risks,
- Prioritization of Authorizations that pose higher environmental impacts,
- Prioritization of Authorizations for which non-compliance has been high,
- Timeline of application dates/age of Authorizations.

The Commission determined that Treater and User Authorizations should not be renewed more frequently than every five years, unless specific conditions in 84.6(D) for Treaters, and 84.9(D) for Users are met which are consistent with the considerations for modification of a CDPS permit during its permit term in Regulation 61. Conditions in 84.6(D) and 84.9(D) are listed below:

- Violation of any terms or conditions of the Treater or User Authorization;
- Obtaining a User Authorization by misrepresentation or failing to disclose any fact which is material to the granting or denial of a User Authorization or to the establishment of terms or conditions of the User Authorization;
- Materially false or inaccurate statements or information in the User Application; or
- A determination that the authorized activity endangers human health or the classified existing uses of state waters and can only be regulated to acceptable levels by permit or termination.

C. Variance Processes to Add and Authorize New Uses - 84.12(B)

The Commission recognized that some uses of reclaimed water that are not authorized could be allowed under a variance in certain conditions. Section 84.12(B) provides the conditions to apply for a variance to use reclaimed water for applications not listed in section 84.10, Table A. Proponents of new uses may include, but are not limited to, the Division, Treater, Users and other governing agencies. The Commission also determined two conditions, described in 84.12(B)(1), for which new uses may be added using the process. The first is if another state or federal governing agency provides oversight and water quality regulations that are equivalent to or surpass the public and environmental health protections that would be afforded in Regulation 84 [section 84.12(B)(1)(a)]. The second condition is if the new use results in no additional risk to public health or the environment while using existing reclaimed water categories and Implementation Requirements, or by adding some new Site-specific Implementation Requirements to Authorizations if necessary [section 84.12(B)(1)(b)]. These two conditions would allow for flexibility to broaden categories of uses without a formal Commission rulemaking.

It was determined that since a formal rulemaking will not occur in these cases, the public should have an opportunity to be involved in decisions regarding these new uses. The new use variance request and pertinent information will be posted for public notice for comment for 30 days. If, after considering public comments, the Division still finds that the variance meets the criteria in 84.12(B)(1), the Division will provide a notice to the Commission following the public comment period that will contain information regarding the variance request, the Division's findings of the variance request and the public comments. If the Commission takes no action (or after holding an adjudicatory hearing pursuant to 5 CCR 1002-21), the variance will be issued to the Treater and User(s) and the respective Authorizations will be issued. Any uses added through this variance process would be also included during the next triennial review hearing so that the Commission also has the opportunity to formally incorporate them into Regulation 84.

D. Proposals to Authorize Uses - 84.15

The Commission added section 84.15 to provide regulatory conditions to propose new uses to the Commission. This process is intended to be used in circumstances where a variance would not fall under the conditions above, nor is the use listed in Table A. Proponents of these new uses must provide information regarding the approximate potable water that would be saved by implementing the new use. The Commission also determined that proponents provide accompanying Implementation Requirements that would be protective of public health and the environment. Lastly, the Division and Treater resources, such as staff and oversight capacity, must be adequate to support compliance with the new use and associated Implementation Requirements. The Commission will use this information to determine how to prioritize timing and Division resources for adding and authorizing the new use to Regulation 84. Additionally, the Commission may expedite adding a proposed new use at any given time when the potential potable water supply savings is deemed great enough to take action in the immediate or near term.

Editor's Notes

History

Rules 84.4, 84.5, 84.6.A, 84.24 eff. 09/30/2007.

Rules 84.4-84.5, 84.6(A)(3), 84.8-84.10, 84.25 eff. 07/30/2013.

Rules 84.1, 84.4-84.6, 84.8-84.15, 84.26 eff. 11/30/2018.

Rules 84.1, 84.4-84.6, 84.8-84.16, 84.27 eff. 01/14/2020.

Rules 84.5, 84.9, 84.10(D), 84.12(J)-(K), 84.28 eff. 09/30/2020.

Entire rule, 84.29 eff. 08/14/2022.