
Central Valley Regional Water Quality Control Board

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Nader Shareghi
Public Works Director
Mountain House Community Services
District
17103 W. Bethany Road
Mountain House, CA 95391

VIA EMAIL:
nshareghi@sjgov.org

CERTIFIED MAIL
7022 2410 0001 5094 1862

MINOR MODIFICATIONS TO THE MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT, WASTEWATER TREATMENT PLANT, WASTE DISCHARGE REQUIREMENTS ORDER R5-2023-0033 (NPDES PERMIT CA0084271), SAN JOAQUIN COUNTY

Thank you for contacting us regarding a typographical error in the current Waste Discharge Requirements Order R5-2023-0033 (Order) regarding ultraviolet (UV) disinfection system operating specifications in Section VI.C.4.b of the Order.

The current Order implements UV disinfection operating specifications based on the National Water Research Institute's (NWRI) "Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse." WDR Section VI.C.4.b and Attachment F Section VI.B.4.b of the current Order includes NWRI-based UV operating specifications for the former sequencing batch reactor (SBR) facility but does not include NWRI-based UV operating specifications for the upgraded membrane bioreactor (MBR) facility. This inadvertent omission of UV operating specifications for the upgraded facility is a typographical error since the Order includes filtration specifications for both the former and upgraded facility. Pursuant to Code of Federal Regulations, 40 CFR 122.63(a), a minor modification of an NPDES permit is allowed to correct typographical errors.

1. The following minor modifications are made to Waste Discharge Requirements, Section VI.C.4.b, of the Order:

b. UV Disinfection System Operating Specifications.

- i. Effective immediately, the UV disinfection system must be operated in accordance with an operations and maintenance program that assures adequate disinfection, and shall meet the following minimum specifications to provide virus inactivation equivalent to Title 22 Disinfected Tertiary Recycled Water:

- (a) UV Dose. The minimum hourly average UV dose in the UV reactor shall be 100 millijoules per square centimeter (mJ/cm²).
 - (b) UV Transmittance. The minimum hourly average UV transmittance (at 254 nanometers) in the wastewater measured at UVS-001 shall not fall below 55 percent.
 - (c) The lamp sleeves and cleaning system components must be visually inspected per the manufacturer's operations manual for physical wear (scoring, solarization, seal leaks, cleaning fluid levels, etc.) and to check the efficacy of the cleaning system.
 - (d) The lamp sleeves must be cleaned periodically as necessary to meet the UV dose requirements.
 - (e) Lamps must be replaced per the manufacturer's operations manual, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained.
- i. Effective upon initiation of operations of the upgraded Facility and submittal of the certification in Technical Reports Table E-11, the UV disinfection system must be operated in accordance with an operations and maintenance program that assures adequate disinfection, and shall meet the following minimum specifications to provide virus inactivation equivalent to Title 22 Disinfected Tertiary Recycled Water:
- (a) UV Dose. The minimum hourly average UV dose in the UV reactor shall be 80 millijoules per square centimeter (mJ/cm²).
 - (b) UV Transmittance. The minimum hourly average UV transmittance (at 254 nanometers) in the wastewater measured at UVS-001 shall not fall below 65 percent.
 - (c) The lamp sleeves and cleaning system components must be visually inspected per the manufacturer's operations manual for physical wear (scoring, solarization, seal leaks, cleaning fluid levels, etc.) and to check the efficacy of the cleaning system.
 - (d) The lamp sleeves must be cleaned periodically as necessary to meet the UV dose requirements.
 - (e) Lamps must be replaced per the manufacturer's operations manual, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained.
1. The following minor modifications are made to Attachment F, Section VI.B.4.b, of the Order:

- b. **UV Disinfection System Operating Specifications.** This Order requires that wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the DDW reclamation criteria, CCR, Title 22, division 4, chapter 3, (Title 22), or equivalent. To ensure that the UV disinfection system is operated to achieve the required pathogen removal, this Order includes effluent limits for total coliform organisms, filtration system operating specifications, and UV disinfection system operating specifications. Compliance with total coliform effluent limits alone does not ensure that pathogens in the municipal wastewater have been deactivated by the UV disinfection system. Compliance with the effluent limits and the filtration system and UV disinfection operating specifications demonstrates compliance with the equivalency to Title 22 disinfection requirement.

The NWRI guidelines include UV operating specifications for compliance with Title 22. For water recycling in accordance with Title 22, the UV system shall be an approved system included in the Treatment Technology Report for Recycled Water, December 2009 (or a later version, as applicable) published by the DDW. The UV system shall also conform to all requirements and operating specifications of the NWRI guidelines. A memorandum dated 1 November 2004 issued by DDW to Regional Water Board executive offices recommended that provisions be included in permits for water recycling treatment plants employing UV disinfection requiring dischargers to establish fixed cleaning frequency of lamp sleeves, as well as include provisions that specify minimum delivered UV dose that must be maintained (per the NWRI Guidelines).

For facilities utilizing cloth media filtration as part of the treatment process train upstream of UV disinfection, the NWRI guidelines recommend a minimum hourly average UV dose of 100 mJ/cm². Therefore, this Order includes UV operating specifications requiring a minimum hourly average UV dose of 100 mJ/cm² and a minimum hourly average UV transmittance of 55 percent, per the NWRI guidelines.

For facilities utilizing membrane filtration as a part of the treatment process, the NWRI guidelines recommend a minimum hourly average UV dose of 80 mJ/cm². Therefore, this Order includes UV operating specifications requiring a minimum hourly average UV dose of 80 mJ/cm² and a minimum hourly average UV transmittance of 65 percent, per the NWRI guidelines for the upgraded Facility.

If the Discharger conducts a site-specific UV engineering study that demonstrates a lower UV dose meets a Title 22 equivalent virus removal, this Order may be reopened to revise the UV operating specifications accordingly.

The corrected Order may be downloaded from the Central Valley Water Board's Adopted Orders web page at:

[Adopted / Issued Orders | Central Valley Regional Water Quality Control Board \(ca.gov\)](#)

(https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/).

If you have any questions regarding this minor modification, please contact Saranya Elankovan at (916) 464-4742 or Saranya.Elankovan@waterboards.ca.gov.

Patrick Pulupa
Executive Officer

cc:

Peter Kozelka, U.S. EPA, Region IX, San Francisco (email only)

Prasad Gullapalli, U.S. EPA Region IX, San Francisco (email only)

Michelle Brown, Robertson-Bryan (email only)

Karen Morgan, Mountain House Community Services District (email only)