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SECRETARY FOR
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North Coast Regional Water Quality Control Board

November 18, 2021

Mr. Patrick Fuss
City of Healdsburg
401 Grove Street
Healdsburg, CA 95448
pfuss@ci.healdsburg.ca.us

Dear Mr. Fuss:

Subject: City of Healdsburg's Recycled Water Distribution and Use Program - Notice of Applicability of Coverage under State Water Resources Control Board Order No. WQ 2016-0068-DDW Water Reclamation Requirements for Recycled Water Use

File: City of Healdsburg, Recycled Water Program
WDID No. 1B15092RSON, Place ID CW-816607

This letter serves as a Notice of Applicability (NOA) from the North Coast Regional Water Quality Control Board (Regional Water Board) that the State Water Resources Control Board (State Water Board) Water Quality Order No. WQ 2016-0068-DDW, *Water Reclamation Requirements for Recycled Water Use* (General Order) is applicable to the subject Recycled Water Program. As specified in the General Order, coverage is only provided for the distribution and use of recycled water.

On November 14, 2019, the City of Healdsburg (City) submitted a Recycled Water Program Technical Report and Notice of Intent (NOI) which included a Title 22 Recycled Water Engineering Report to request revision of regulatory coverage for the City's Recycled Water Program under the General Order for expansion of its recycled water system. The November 14, 2019 NOI expands upon and supplements the NOI that was submitted by the City on May 5, 2016. The City updated the NOI in response to comments from the State Water Board Division of Drinking Water (DDW) and Regional Water Board staff and resubmitted it on May 3, 2021 as the April 2021 NOI on the [City of Healdsburg website](https://ci.healdsburg.ca.us/DocumentCenter/View/13412/2021-Notice-of-Intent-and-Technical-Report) (<https://ci.healdsburg.ca.us/DocumentCenter/View/13412/2021-Notice-of-Intent-and-Technical-Report>).

GREGORY A. GIUSTI , CHAIR | MATTHIAS ST. JOHN, EXECUTIVE OFFICER

The April 2021 NOI includes the DDW-approved January 2021 Title 22 Recycled Water Engineering Report (see Title 22 Recycled Water Engineering Report section below for further discussion).

The City has been enrolled under the General Order in accordance with the NOA issued by the Regional Water Board Executive Officer on July 1, 2016. The NOI addresses all previously approved recycled water uses as well as several new recycled water uses.

The City's NOI requests coverage under the General Order for the following previously approved (sites approved under the 2016 NOA) and new recycled water uses that are further identified on the Recycled Water Users map on the [City of Healdsburg website](https://ci.healdsburg.ca.us/DocumentCenter/View/13413/2021-Recycled-Water-User-Map) (<https://ci.healdsburg.ca.us/DocumentCenter/View/13413/2021-Recycled-Water-User-Map>) and Recycled Water User list included as Attachment 1 to Monitoring and Reporting Program No. R1-2021-0028 that is included as Attachment A to this NOA. The City maintains recycled water use agreements with all users that receive recycled water by pipeline and issues permits to all recycled water users under the City's Recycled Water Trucking Program. (Contracted Uses).

Previously Approved Recycled Water Uses:

- Residential/Commercial Landscape Irrigation Recycled Water Trucking Program

Recycled water is made available through the City's Recycled Water Trucking Program for use by the City and contracted uses by residents, and business owner/operators for landscape and garden irrigation at homes, parks, schools, and commercial buildings. Recycled water is available to permitted residential/commercial users at the recycled water fill station located at the Water Recycling Facility (WRF) located at 340 Foreman Lane. The Best Management Practices (BMPs) and regulatory requirements for landscape irrigation with recycled water are described in the January 2021 Title 22 Recycled Water Engineering Report (Engineering Report) (see Title 22 Recycled Water Engineering Report discussion below regarding iterative submission and Division of Drinking Water acceptance of this report).

- Vineyard Irrigation Program

Contracted Users receive recycled water for vineyard irrigation by pipeline and trucking. The BMPs and regulatory requirements for vineyard irrigation with recycled water are described in the January 2021 Engineering Report.

- Aggregate Processing

Syar Industries, Inc. located at 13666 Healdsburg Avenue, Healdsburg, CA receives recycled water through a pipeline for aggregate processing at its main plant and for dust control on the facility roads and for washing and processing

aggregate materials. The BMPs and regulatory requirements for aggregate processing with recycled water are described in the January 2021 Engineering Report.

- Construction Uses

Recycled water is primarily used at construction sites for controlling dust on roads and from uncovered trucks that are transporting materials around construction sites. Recycled water may also be used for soil compaction, concrete mixing, herbicide/pesticide dilution, consolidating backfill in trenches, and pressure testing new sewer, gas, or recycled water lines. Recycled water is available to permitted water haulers at recycled water fill stations located at the WRF and also at Kinley Drive. Recycled water may be transported to sites within the City's recycled water hauling area (shown in Figure 11 of the January 2021 Engineering Report). The BMPs and regulatory requirements for construction use with recycled water are described in the January 2021 Engineering Report.

- Fire Suppression

In emergency situations, recycled water may be used for fire suppression at the WRF, City property, private property, or public lands. Recycled water is available at the City's fill stations, through the recycled water pipeline, or directly from storage ponds at the WRF. The BMPs and regulatory requirements for fire suppression use with recycled water are described in the January 2021 Engineering Report.

- Sanitary Sewer Cleaning

The City uses recycled water for sanitary sewer cleaning of the City's public sewer system following the BMPs described in the January 2021 Engineering Report.

- Street Sweeping

The City began using recycled water for street sweeping operations within the City in May 2021 in recognition of the current drought and pursuant to the City's Stage 2 water shortage emergency plan, which among other things, mandates that potable water not be used for street sweeping or for construction purposes. The City's contractor operates under a use agreement and has been trained regarding BMPs for street sweeping. These BMPs are described in the January 2021 Engineering Report.

New Recycled Water Uses:

- Pasture/Cut Hay Irrigation

Contracted Users will receive recycled water to irrigate pasture and cut hay (ryegrass, alfalfa). The BMPs and regulatory requirements for irrigation of these crops with recycled water are described in the January 2021 Engineering Report.

- Vineyard Frost Control

Contracted Users will receive recycled water for vineyard frost control. The BMPs and regulatory requirements for frost control with recycled water are described in the January 2021 Engineering Report.

- Orchard Irrigation

Contracted Users will use recycled water for orchard irrigation that includes apple, plum, prune, and peach trees. The BMPs and regulatory requirements for orchard irrigation with recycled water are described in the January 2021 Engineering Report.

- Cannabis Irrigation

Cannabis cultivation facilities enrolled under Order WQ 2019-0001-DWQ, *General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities* (Cannabis Order) may be permitted to receive recycled water through WRF Fill Station kiosks and through the recycled water pipeline. The typical irrigation schedule will be from mid-April to the end of July. The BMPs and regulatory requirements for cannabis irrigation with recycled water are described in the January 2021 Engineering Report.

- Consumption of Disinfected Tertiary Recycled Water by Non-dairy Livestock

Contracted Users will use recycled water for drinking water consumption by non-dairy livestock which may include commercial poultry, non-dairy beef cattle, horses, mules, donkeys, non-dairy sheep, non-dairy goats, and swine. BMPs and the Title 22 Recycled Water Criteria requirements to produce and distribute the recycled water for drinking water consumption by non-dairy livestock will be implemented and are described in the City's October 2021 addendum to the April 2021 NOI and January 2021 Engineering Report. The requests for this use were prompted by the 2021 drought emergency. Upon DDW acceptance of the Title 22 Report addendum (to be documented in a DDW acceptance letter), the use of recycled water for consumption by non-dairy livestock will be authorized under

this NOA.

The NOI/Title 22 report addendum submitted by the City on October 19, 2021 demonstrates to DDW's satisfaction that the City's recycled water system reliably complies with the following BMPs and the Title 22 Recycled Water Criteria to produce recycled water that is acceptable for drinking water consumption by non-dairy livestock:

1. The City has a targeted source control program that complies with the National Pretreatment Program and includes technical based local limits to exclude wastewater inputs from slaughterhouses/abattoirs, zoos, and other significant sources of animal wastes, and to exclude concentrated industrial chemicals of concern.
2. The tertiary recycled water must be disinfected using an approved UV disinfection system that meets the disinfection criteria set forth in Title 22 for disinfected tertiary recycled water. The UV disinfection in combination with the filtration process must demonstrate 5 log removal of plaque forming units of F-specific bacteriophage MS2 or polio virus.
3. The City must demonstrate that an appropriate amount of chlorine residual is maintained in the disinfected tertiary recycled water being supplied at the point of use for preventing microbial growth. DDW's recommendation is to maintain a minimum free chlorine residual of 0.2 mg/l or a minimum chloramine (Total Chlorine) residual of 0.5 mg/l at the point of use.

All recycled water uses authorized under this NOA have been reviewed for compliance with the California Environmental Quality Act (CEQA), including the following documents and the dates that these documents were certified by the Healdsburg City Council: (1) *Final Environmental Impact Report, City of Healdsburg Wastewater Treatment Plant Upgrade Project* (FEIR) certified in July 2005; (2) *Initial Study/Mitigated Negative Declaration Syar Property Recycled Wastewater Agricultural Irrigation Project Healdsburg, California* approved in 2010 that addressed irrigation of additional vineyard areas by Syar Industries, Inc.; (3) *Addendum to Final Environmental Impact Report, City of Healdsburg Wastewater Treatment Plant Upgrade/Seasonal Irrigation Reuse Project* certified in April 2014 to address trucked delivery of recycled water for vineyard irrigation in the Alexander, Dry Creek, and Russian River Valleys; (4) *Addendum to Final Environmental Impact Report, City of Healdsburg Wastewater Treatment Plant Upgrade/Seasonal Irrigation Reuse Project* certified in October 2014 to address use of recycled water by Syar Industries, Inc. for aggregate processing; (5) *Addendum to Final Environmental Impact Report City of Healdsburg Wastewater Treatment Plant Upgrade/Seasonal Irrigation Reuse Project* certified March 21, 2016 to address additional vineyard irrigation by pipeline and truck hauling; and

(6) a Final Subsequent EIR (SEIR) City of Healdsburg Wastewater Treatment Plant Upgrade Project and Mitigation Monitoring and Reporting Program Healdsburg Recycled Water Program Expansion report both certified in October 2019.

Title 22 Recycled Water Engineering Report (Engineering Report) and Addendum.

The City submitted an Engineering Report dated November 14, 2019 to the Regional Water Board and the DDW staff. DDW staff provided comments and requested additional revisions to the Engineering report in a letter dated April 28, 2020. The City resubmitted its Engineering Report with revisions addressing DDW's comments on November 3, 2020. DDW staff requested additional information from the City in an email dated January 5, 2021. The City submitted its January 2021 Engineering Report on February 3, 2021. DDW staff provided comments and conditional acceptance of the City's Recycled Water Engineering Report to the City in a letter dated February 25, 2021 (Attachment B to this NOA). The City subsequently submitted an April 2021 NOI which includes the January 2021 Title 22 Recycled Water Engineering Report that was accepted by DDW.

The City submitted an addendum to the April 2021 NOI/Title 22 Engineering Report requesting authorization to provide recycled water for non-dairy livestock watering on July 26, 2021 documenting BMPs and requirements that apply to the use of recycled water for consumption by commercially produced non-dairy livestock. The City revised the Title 22 Engineering Report addendum in response to DDW's August 12, 2021 and October 13, 2021 comments. The final addendum submitted on October 19, 2021 was approved by DDW by acceptance letter dated October 28, 2021 (Attachment C to this NOA).

The City is required to comply with the recycled water use conditions specified in the February 25, 2021 and October 28, 2021 DDW acceptance letters. Consistent with the authority and scope of the General Order, DDW conditions related to the distribution and use of recycled water are included in Monitoring and Reporting Program (MRP) No. R1-2021-0028 (Attachment A to this NOA) that is part of this enrollment under the General Order (Attachment D to this NOA).

Recycled water production remains under the authority of the City of Healdsburg's Wastewater Treatment, Recycling and Disposal Facility's NPDES Permit No. CA0025135 (Order No. R1-2016-0015 and future revisions thereto). DDW conditions related to the production of recycled water are included in the MRP of the NPDES Permit (Attachment E to the NPDES permit). The MRP for the City's Recycled Water Distribution and Use Program is included as Attachment A of this NOA. The City's Recycled Water Program shall be operated in accordance with the April 2021 NOI which includes the amended January 2021 Title 22 Recycled Water Engineering Report and the October 2021 Title 22 Recycled Water Engineering Report addendum.

Based on information provided in the April 2021 NOI (which includes the January 2021 Title 22 Recycled Water Engineering Report) and October 2021 NOI/Title 22 Report addendum, Regional Water Board staff determined that the City's use of recycled water authorized in this NOA is consistent with the general and specific conditions of the General Order and additional conditions set forth by DDW in its February 25, 2021 and October 28, 2021 acceptance letters. Therefore, this NOA serves as formal notice that Order WQ 2016-0068-DDW is applicable to the City and uses described in the NOI. The City will act as the Administrator of its Recycled Water Program.

As the Administrator, the City will be responsible for the administration of the Recycled Water Program authorized pursuant to this enrollment under the General Order, including the requirements of Title 22. The City is also the Recycled Water Producer and Distributor and is responsible for all permit requirements related to the production of recycled water pursuant to NPDES Permit No. CA0025135 (Order No. R1-2016-0015 and future revisions thereto).

The Administrator shall pay the required annual fee specified in the annual billing from the State Water Board until this NOA is terminated. The Administrator must submit in writing a Notice of Termination if the water recycling program covered by this NOA is discontinued or covered under a different permitting mechanism (i.e., NPDES permit) in the future.

A copy of the General Order is included as Attachment D to this NOA. The General Order is also available on the [State Water Board website](https://www.waterboards.ca.gov/board/decisions/adopted_orders/water_quality/2016/wqo2016_0068_ddw.pdf) (https://www.waterboards.ca.gov/board/decisions/adopted_orders/water_quality/2016/wqo2016_0068_ddw.pdf).

If you have any questions regarding this NOA or your enrollment under the General Order, please contact Cathleen Goodwin of my staff at Cathleen.Goodwin@waterboards.ca.gov or Matthew Herman of my staff at Matthew.Herman@waterboards.ca.gov or (707) 576-2683.

Sincerely,

Matthias St. John
Executive Officer

211118_CAG_ RecycledWater_Healdsburg_NOA_final

Attachments:

Mr. Patrick Fuss

November 18, 2021

Attachment A: Monitoring and Reporting Program, Order No. R1-2021-0028

Attachment B: DDW Conditional Acceptance Letter, Dated February 25, 2021

Attachment C: DDW Conditional Acceptance Letter, Dated November 4, 2021

Attachment D: Statewide General Water Reclamation Requirements for Recycled Water Use, Order WQ 2016-0068-DDW

cc: Mir Ali, Division of Drinking Water, mir.ali@waterboards.ca.gov
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ATTACHMENTS

ATTACHMENT A

**MONITORING AND REPORTING PROGRAM
ORDER NO. R1-2021-0028**

Monitoring and Reporting Program Order No. R1-2021-0028 may also be found
on the Regional Water Board website at:

[Adopted Orders Search | California Northcoast Regional Water Quality Control
Board](#)

North Coast Regional Water Quality Control Board

ATTACHMENT A

TO

November 18, 2021 Notice of Applicability of Coverage under State Water Resources Control Board Order No. WQ 2016-0068-DDW Water Reclamation Requirements for Recycled Water Use

**MONITORING AND REPORTING PROGRAM
ORDER No. R1-2021-0028
FOR THE
CITY OF HEALDSBURG RECYCLED WATER PROGRAM
WDID NO. 1B15092RSON
SONOMA COUNTY**

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ATTACHMENTS

- Attachment 1 – Summary of Recycled Water User Sites
- Attachment 2 – Standard Provisions and Reporting Requirements (Attachment C to Statewide General Water Reclamation Requirements for Recycled Water Use, Order WQ 2016-0068-DDW)

**MONITORING AND REPORTING PROGRAM (MRP)
Order No. R1-2021-0028**

This monitoring and reporting program (MRP) replaces the MRP in the General Order and serves as a project-specific MRP to address recycled water distribution and use area specific water quality concerns. This MRP also rescinds and replaces MRP No. 2016-0068-DWQ-0001 that was issued on July 1, 2016.

This MRP was developed to be consistent with Order WQ 2016-0068-DDW (hereafter General Order) and to reflect the information provided in the April 2021 *Recycled Water Program Technical Report and Notice of Intent Revised to Include January 2021 Title 22 Engineering Report and Updated Attachments* (Technical Report) submitted by the City of Healdsburg on May 3, 2021 and the October 2021 *Engineering Report Addendum Production, Distribution, and Use of Recycled Water for Non-Dairy Livestock Watering* (Title 22 Report Addendum) submitted on October 19, 2021. The April 2021 Technical Report was updated to include the January 2021 Title 22 Recycled Water Engineering Report that was originally submitted by the City on February 3, 2021 and accepted by State Water Board Division of Drinking Water (DDW) by letter dated February 25, 2021. The Title 22 Addendum was accepted by DDW by letter dated October 28, 2021.

Water recycling specifications and requirements, including monitoring requirements that apply to the production of recycled water and storage of treated wastewater and recycled water prior to its discharge to surface waters, are established in NPDES Permit No. CA0025135 (currently WDR/NPDES Order No. R1-2016-0015, Waste Discharge Requirements (WDR) for the City of Healdsburg Wastewater Treatment, Recycling, and Disposal Facility, Sonoma County and the MRPs associated with that Order) and future revisions of that Order.

The City of Healdsburg owns and operates a wastewater treatment plant (Facility) that produces disinfected tertiary recycled water for beneficial reuse for agricultural and industrial uses as allowed by the California Code of Regulations, Title 22, Division 4, Chapter 3. The City of Healdsburg (hereafter Administrator) has applied for and received coverage for its Recycled Water Program that is subject to the Notice of Applicability (NOA) of Enrollment under Order WQ 2016-0068-DDW (hereafter General Order). The General Order delegates the responsibility of administering water recycling programs to a designated Administrator to the fullest extent possible. The City of Healdsburg will act as the Administrator of the City's Recycled Water Program. The details of the enrollment are described in the NOA letter issued by the North Coast Regional Water Quality Control Board (Regional Water Board) Executive Officer on November 18, 2021.

This MRP describes requirements for monitoring the Administrator's recycled water system. This MRP is issued pursuant to California Water Code (Water Code) section 13267 and establishes monitoring and reporting requirements that implement California regulations. The technical and monitoring reports required by this Order are necessary to ensure compliance with the General Order and to protect human health and waters of the state.

The costs of the technical or monitoring reports required by this Order bear a reasonable relationship to the need for these reports and the benefit to be gained by these reports. The Administrator shall not implement any changes to this MRP unless and until a revised MRP is issued by the Regional Water Board Executive Officer. The Administrator shall implement this monitoring and reporting program.

1. GENERAL MONITORING PROVISIONS

1.1. Supplemental Monitoring Provision

If the Administrator monitors any pollutant more frequently than required by this Order, using test procedures approved by title 40, Code of Federal Regulations (C.F.R.), part 136 or as specified in this Order, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the monthly and annual discharge monitoring reports.

1.2. Data Quality Assurance Provision

Laboratories analyzing monitoring samples shall be certified by the State Water Resources Control Board (State Water Board), in accordance with the provisions of Water Code section 13176 and must include quality assurance/quality control data with their analytical reports.

1.3. Sample Documentation

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The name of the sampler, sample type (grab or composite), time, date, location, bottle type, and any preservative used for each sample shall be recorded on the sample chain of custody form. The chain of custody form must also contain all custody information including date, time, and to whom samples were relinquished. If composite samples are collected, the basis for sampling (time or flow weighted) shall be approved by Regional Water Board staff.

1.4. Instrumental and Calibration Provision

All monitoring instruments and devices used by the Administrator to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.

All flow measurement devices (except customer meters) shall be calibrated no less than the manufacturer's recommended intervals or one-year intervals, (whichever comes first) to ensure continued accuracy of the devices. Customer meters not requiring periodic calibration per the manufacturer, at a minimum, shall be visually inspected and documented to be in proper operational condition on an annual basis.

1.5. Field test Instruments

Field test instruments (such as those used to test pH, dissolved oxygen, chlorine residual, and electrical conductivity) may be used provided that the samples are analyzed by a State Water Board certified laboratory, or all of the following are met:

- 1.5.1. The user is trained in proper use and maintenance of the instruments;
- 1.5.2. All readings are properly recorded and records maintained;
- 1.5.3. The instruments are field calibrated prior to monitoring events at the frequency recommended by the manufacturer;
- 1.5.4. Instruments are serviced by the manufacturer or authorized representative at the recommended frequency; and
- 1.5.5. Field calibration reports are maintained and available for at least three years.

1.6. Minimum Levels (ML) and Reporting Levels (RL)

Compliance monitoring analyses shall be conducted using detection limits that are lower than the applicable effluent limitations and/or water quality criteria. If no Minimum Level (ML) value is below these levels, the lowest ML shall be selected as the Reporting Level (RL).

1.7. Duplicative Monitoring Requirements

If monitoring requirements listed below duplicate existing monitoring requirements under other orders, including WDRs or waivers of WDRs, then duplication of sampling and monitoring activities are not required if the monitoring activity satisfies the requirements of this Order. In addition to submitting the results under another order, the results shall be submitted in the reports required by the General Order and this MRP.

1.8. Approved Test Methods

All monitoring must be conducted using approved test methods or other test methods specified in this MRP.

1.9. Sampling Method

Collecting composite samples is acceptable in most cases. Due to short holding times, bacteriological samples collected to verify disinfection effectiveness must be grab samples.

2. RECYCLED WATER MONITORING LOCATIONS

2.1. Recycled Water Monitoring Station Locations

2.1.1. The following monitoring locations have been established for monitoring the quality of the recycled water distributed to recycled water users.

Table 1. Recycled Water Monitoring Station Locations

Distribution Point Name	Monitoring Location Name	Monitoring Location Description
001	REC-001 ⁽¹⁾	Recycled water following all treatment and before it enters recycled water storage.
--	INT-001B ⁽¹⁾	Treated effluent immediately following the advanced wastewater treatment (AWT) process for monitoring AWT turbidity.
002	REC-002	Recycled water following all treatment and before it enters the irrigation distribution system (pipelines or the recycled water fill stations located at the Water Recycling Facility located at 340 Foreman Lane and also at Kinley Drive).
003	REC-003 ⁽²⁾	The point at which the recycled water is delivered for non-dairy livestock consumption (i.e., at the point of delivery to watering trough or storage on ranch site).
--	MW-1	Upgradient Monitoring Well on the north side of Syar Family Vineyard sign on the east side of Westside Road (street address 3874 Westside Road, Healdsburg) 38.56796 deg N, 122.87155 deg W
--	MW-2	Upgradient Monitoring Well on the east side of Westside Road in the road right of way 38.56295 deg N, 122.87106 deg W
-	MW-3	Downgradient Monitoring Well at the southwest corner of the irrigation well area, Ferrari Carano (Foley Family Vineyard) Storrey Vineyard 38.55700 deg N, 122.65884 deg W

Distribution Point Name	Monitoring Location Name	Monitoring Location Description
--	MW-4	Downgradient Monitoring Well at the south side of the Ferrari Carano (Foley Family Vineyard) Storrey Vineyard vineyard road 38.55481 deg N, 122.86260 deg W

Table Notes:

- Monitoring Locations REC-001 and INT-001B are included for information purposes only. Monitoring and reporting at these locations is not required under this MRP. Monitoring and reporting requirements for these two monitoring locations are included in NPDES Permit No. CA0025135 (currently Order No. R1-2016-0015 or future revisions thereto.)
- Monitoring shall be conducted at all non-dairy livestock watering delivery sites. Each delivery site shall be assigned a unique monitoring location for each delivery site as follows: REC-001(a), REC-001(b), etc.

3. RECYCLED WATER MONITORING REQUIREMENTS

3.1. Recycled Water Monitoring Locations INT-001B, REC-001, and REC-002

- 3.1.1. The Administrator is required to monitor for Total Coliform Bacteria at Monitoring Location REC-001 and Turbidity at INT-001B. These requirements may be met though submittal of data collected as required under NPDES Order No. R1-2016-0015 (or future revisions thereto) as described in section 1.7 above.
- 3.1.2. The Administrator shall monitor the quality of the recycled water prior to distribution to the irrigation distribution system at Monitoring Location REC-002 as follows:

Table 2. Recycled Water Monitoring Requirements – Monitoring Location REC-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ⁽¹⁾
Recycled Water Flow ⁽²⁾	mgd	Meter	Continuous	---
Total Chlorine Residual	mg/L	Grab	Daily ⁽³⁾	Part 136
Ammonia Nitrogen (as N)	mg/L	Grab	Monthly	Part 136
Nitrate Nitrogen (as N)	mg/L	Grab	Monthly	Part 136
Nitrite Nitrogen (as N)	mg/L	Grab	Monthly	Part 136
Organic Nitrogen (as N)	mg/L	Grab	Monthly	Part 136
Total Nitrogen (as N)	mg/L	Calculation ⁽⁴⁾	Monthly	--

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ⁽¹⁾
Total Dissolved Solids (TDS)	mg/L	Grab	Monthly ⁽⁵⁾	Part 136
Sodium	mg/L	Grab	Monthly ⁽⁵⁾	Part 136
Chloride	mg/L	Grab	Monthly ⁽⁵⁾	Part 136
Boron	mg/L	Grab	Monthly ⁽⁵⁾	Part 136

Table Notes

1. Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as the current edition of Standard Methods for Examination of Waters and Wastewater (American Public Health Administration).
2. Each month, the Administrator shall report the daily average and monthly average flows.
3. Chlorine residual monitoring is required daily when providing recycled water for urban use (i.e., landscape irrigation uses through the Administrator’s recycled water trucking program).
4. Total Nitrogen shall be calculated as the sum of the results for Ammonia Nitrogen, Nitrate Nitrogen, Nitrite Nitrogen, and Organic Nitrogen.
5. The monitoring frequency for TDS, Sodium, Chloride, and Boron may be reduced or monitoring eliminated by the Regional Water Board Executive Officer through the modification of this MRP if monitoring data demonstrate that concentrations of these constituents are consistently lower than water quality objectives for protecting groundwater.

3.2. Recycled Water Monitoring Location REC-003

- 3.2.1. The Administrator shall monitor the quality of the recycled water delivered by truck for non-dairy livestock watering at Monitoring Locations REC-003 as follows:

Table 3. Recycled Water Monitoring Requirements – Monitoring Location REC-003(a), REC-003(b), etc.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ⁽¹⁾
Recycled Water Volume	gallons	(2)		--

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ⁽¹⁾
Free Chlorine Residual OR Chloramines (Total Chlorine)	mg/L	Grab	Each batch of recycled delivered to each approved use site ^(3, 4)	Part 136
<p>1. Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as the current edition of Standard Methods for Examination of Waters and Wastewater (American Public Health Administration).</p> <p>2. The volume of recycled water shall be metered at the fill station. A log of volumes delivered shall be maintained at each use site.</p> <p>3. Monitoring shall be conducted at each delivery site. Each delivery site shall be assigned a unique monitoring location for each delivery site as follows: REC-003(a), REC-003(b), etc.</p> <p>4. Each batch of recycled water delivered to user site by the tanker truck must be checked for a free chlorine residual of at least 0.2 mg/l at the time of discharge to the user(s) facility (storage tank, trough).</p>				

4. RECEIVING WATER MONITORING REQUIREMENTS - GROUNDWATER

4.1. Groundwater Monitoring

4.1.1. The Administrator shall monitor groundwater in accordance with acceptable groundwater monitoring practices at approved groundwater monitoring locations in agricultural irrigation areas as follows:

Table 4. Groundwater Monitoring Requirements – Monitoring Locations MW-1, MW-2, MW-3, and MW-4

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ⁽¹⁾
Depth to Groundwater ⁽²⁾	0.1 feet	Measurement	Quarterly	---
Groundwater Elevation	0.1 feet MSL	Measurement	Quarterly	--
Ammonia Nitrogen (as N)	mg/L	Grab	Quarterly	Part 136
Nitrate Nitrogen (as N)	mg/L	Grab	Quarterly	Part 136
Nitrite Nitrogen (as N)	mg/L	Grab	Quarterly	Part 136
Organic Nitrogen (as N)	mg/L	Grab	Quarterly	Part 136

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method ⁽¹⁾
Total Nitrogen (as N)	mg/L	Calculation ⁽³⁾	Quarterly	--
Total Dissolved Solids	mg/L	Grab	Quarterly	Part 136
Chloride	mg/L	Grab	Quarterly	Part 136
Boron	mg/L	Grab	Quarterly	Part 136
Sodium	mg/L	Grab	Quarterly	Part 136

Table Notes

1. Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of Standard Methods for Examination of Waters and Wastewater (American Public Health Administration).
2. Depth to groundwater shall be measured prior to purging.
3. Total Nitrogen shall be calculated as the sum of the results for Ammonia Nitrogen, Nitrate Nitrogen, Nitrite Nitrogen, and Organic Nitrogen.

4.1.2. The Regional Water Board may revise this MRP to require expansion of the groundwater monitoring network, if, based on the results of monitoring conducted pursuant to this MRP, the Regional Water Board determines that the number or locations of groundwater monitoring wells are insufficient to yield groundwater samples that represent to quality of groundwater affected by the recycled water discharge.¹

5. OTHER MONITORING REQUIREMENTS

5.1. Storage Pond Monitoring

The Administrator shall monitor all recycled water storage ponds and impoundments as described in Table 3.

¹ Source: “The groundwater monitoring system shall include a sufficient number of monitoring points, installed at appropriate locations, to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater that has not been affected by a release from the waste management unit.”[Title 27, § 20415(b)(1)(A)].

Table 5. Storage Pond Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Reporting Frequency
Freeboard	0.1 feet	Measurement	Quarterly	Annually
Odors	---	Observation	Quarterly	Annually
Berm Condition	---	Observation	Quarterly	Annually

5.2. Recycled Water Use

5.2.1. The Administrator shall monitor use area(s) at a frequency appropriate to determine compliance with all conditions of the General Order and the Administrator’s recycled water use program requirements. An Administrator may assign monitoring responsibilities to a User as part of the Water Recycling Use Permit program; however, the Administrator retains responsibility to ensure the data is collected, as well as prepare and submit the annual report.

5.2.2. Visual observations of the agricultural and industrial use areas shall be recorded a minimum of monthly during periods of recycled water use, and under representative use conditions, in order to verify compliance with recycled water requirements in the General Order and NOA. The Administrator shall confirm proper operation of the recycled water system and associated best management practices (BMPs) and include a record of any malfunctions or findings of improper operation, including, but not limited to: observations for evidence of ponding that exceeds 24 hours, runoff, odors, vectors, leaks or breaks in equipment, proper identification of recycled water infrastructure, proper signage², etc., as well as corrective actions taken to resolve the issue.

Visual observations may be performed by the recycled water users in accordance with the Administrator’s user agreements. Visual observation and associated records shall be retained and included in the Administrator’s Annual Recycled Water Report.

5.2.3. The following shall be recorded for each User with additional reporting for use areas as appropriate. The frequency of use area inspections shall be based on the complexity and risk of each use area. Use areas may be aggregated to combine acreage for calculation or observation purposes.

² Signage at non-dairy livestock watering use sites shall caution that recycled water use is only for non-dairy livestock drinking.

Use areas are summarized in Attachment 1 of this MRP and on a Recycled Water Users map located on the [City of Healdsburg website](https://ci.healdsburg.ca.us/DocumentCenter/View/13413/2021-Recycled-Water-User-Map) (<https://ci.healdsburg.ca.us/DocumentCenter/View/13413/2021-Recycled-Water-User-Map>). Use area monitoring shall include the following parameters:

Table 6. Recycled Water Use Area Requirements ⁽¹⁾

Parameter	Units	Sample Type	Minimum Sampling/ Observation Frequency ⁽²⁾
Recycled Water User	---	---	---
Recycled Water Flow ⁽³⁾	gpd ⁽⁴⁾	Meter ⁽⁵⁾	Monthly
Acreage Applied ⁽⁶⁾	Acres	Calculated	Annually
Application Rate (hydraulic)	Inches/acre/year	Calculated	Annually
Total Nitrogen Application Rate ^(7,8)	lbs/acre/month	Calculated	Annually
Soil Saturation/Ponding	---	Observation	Monthly
Discharge Off-Site	---	Observation	Monthly
Nuisance Odors/Vectors	---	Observation	Monthly
Leaks or breaks in equipment	---	Observation	Monthly
Notification Signs ⁽⁹⁾	---	Observation	Monthly
Rainfall	Inches	Gage	Daily
ETO or ETc ^(10, 11)	Inches	Gage/Calculation	Daily
Maximum Allowable Hydraulic Agronomic Rate ^(12, 13, 14)	Inches	Calculation	Annually

Table Notes

1. Recycled water production and use area monitoring shall be reported with the annual report (section 6.2 of this MRP). Non-compliance incidents shall be reported as specified in section 6.3 of this MRP.
2. Or less frequently if approved by the Regional Water Board Executive Office through the modification of this MRP.
3. Estimation of recycled water flow shall not include other potable or non-potable “make-up” water used in conjunction with recycled water use.
4. gpd denotes gallons per day.
5. Meter requires meter reading, a pump run time meter, or other approved method of flow monitoring.
6. Acreage applied denotes the acreage to which recycled water is applied.

Parameter	Units	Sample Type	Minimum Sampling/ Observation Frequency ⁽²⁾
<p>7. Nitrogen application rate shall consider nitrogen content of recycled water at EFF-001.</p> <p>8. Nitrogen concentrations shall be calculated and reported “as N”. For example, nitrate-nitrogen = 27 mg/l as NO₃ shall be converted and reported as nitrate-nitrogen = 6.1 mg/L as N using a conversion factor of 14.067 (N)/62.0049 (NO₃).</p> <p>9. Notification signs shall be consistent with the requirements of Title 22, section 60310(g).</p> <p>10. ETo is the reference evapotranspiration from the nearest operating California Irrigation Management Information System (CIMIS) station (Windsor Station #103). ETo is defined as the amount of water used by the plants (transpiration) and evaporated from the soil (evaporation) and is based on the consumptive water use of a local grass field, measured by the California Department of Water Resources, CIMIS database.</p> <p>11. ETc is the amount of full potential water use by a crop and is calculated as ETo times a crop coefficient that accounts for the amount of sun interception and is specific to each use type (vineyard, pasture, pear orchard). The crop coefficient increases with canopy growth. The crop coefficients for each irrigation use type are included in Tables 5 through 13 of the Administrator’s April 2021 NOI.</p> <p>12. Maximum allowable hydraulic agronomic rates for each recycled water use site is calculated as follows:</p> $\text{Hydraulic agronomic rate} = \frac{(E_{To} * K_c) - P}{(1 - LR) * E_u}$ <p>Where:</p> <p>ETo = Reference evapotranspiration (see definition in Table Note 10, above)</p> <p>Kc = Crop growth coefficient for golf course turf, 0.8</p> <p>P = Precipitation (measured at CIMIS Windsor Station #103))</p> <p>LR = Leaching Requirement, 0% (a conservative estimate) is the fraction of irrigation water (irrigation plus precipitation), required to leach the excess salt out of the root zone, to reduce salt stress on the plant root zone. LR is based on the salt concentration of the applied water and the salt tolerance of the crop.</p> <p>Eu = Irrigation efficiency</p>			

Parameter	Units	Sample Type	Minimum Sampling/ Observation Frequency ⁽²⁾
<p>13. Maximum allowable hydraulic agronomic rates for each recycled water use site will be calculated using real-time ETo, precipitation, and crop coefficients that are specific to the crop type as described in the Administrator’s NOI, including Tables 5 through 13, that are included in the April 2021, NOI. Agronomic rate (feet)= (ETo (inches) x crop coefficient – precipitation (inches)) x irrigation efficiency x 1 inch/12 feet. See Tables 5 through 13 on pages 13 through 21 of the April 2021 NOI (https://ci.healdsburg.ca.us/DocumentCenter/View/13412/2021-Notice-of-Intent-and-Technical-Report).</p> <p>14. For vineyards, the maximum allowable hydraulic agronomic rate is the lower of 75% of ETc (calculated monthly and summed for the entire irrigation season) or 9 inches per year distributed over the March through October growing season (per section 2.3.3 and Table 4 of the April 2021 NOI).</p>			

5.2.4. Prior to delivery of recycled water, notification of new user sites for non-dairy livestock watering use areas will be provided to DDW for review and approval.

5.3. Industrial/Other Uses of Recycled Water

5.3.1. The potential for cross-connections shall be monitored and backflow prevention devices shall be inspected at use sites where cross-connection or backflow incident potential exist, as listed in Table 7, below, or more frequently if specified by the State Water Board, Division of Drinking Water (DDW).³

Table 7. Cross-Connection and Backflow Monitoring Requirements

Parameter	Monitoring Frequency	Reporting Frequency
Cross-connection inspection ⁽¹⁾	Annually	Annually
Cross-connection testing	Four Years ⁽²⁾	30 days/Annually ⁽³⁾
Backflow Incident	Continuous	24 hours from discovery

³ Non-dairy livestock water recycled water use sites shall have an initial start-up cross connection inspection. There is potential for hose bib connections to exist for troughs or storage at non-dual source user sites or dual source user sites where the potable water has been turned off. This inspection shall verify that there is no potential for cross-connection or backflow to occur from any of these circumstances. The inspection report shall explicitly note that all of these circumstances have been checked.

Parameter	Monitoring Frequency	Reporting Frequency
Backflow Prevention Device Testing and Maintenance ⁽⁴⁾	Annually	Annually

Table Notes

1. The Administrator shall ensure that any dual sourced recycled water systems (indoor and outdoor) are inspected for possible cross connection with the potable water system.
2. Testing of dual sourced recycled water systems shall be performed prior to initiating recycled water service and at least every four years, or more frequently at the discretion of DDW. Testing results shall be maintained by the Administrator and submitted annually.
3. Cross-connection testing shall be reported pursuant to title 22 section 60314. The report shall be submitted to DDW within 30 days and included in the annual report to the Regional Water Board.
4. Backflow prevention device testing and maintenance shall be conducted by a qualified person as described in Title 17, Section 7605.

5.3.2. The Administrator shall notify DDW prior to conducting cross-connection control tests. Adequate notice must be provided to allow DDW staff the option to witness the test. The certified professional performing the test shall be identified in the notification to DDW.

5.3.3. Inspection and the testing shall be performed by a Cross Connection Control Specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent requirements.

5.3.4. Prior to delivery of recycled water, notification of new user sites for dual plumbed use areas will be provided to DDW for review and approval as required by Title 22 sections 60313-60316.

6. REPORTING REQUIREMENTS

6.1. General Monitoring and Reporting Requirements

6.1.1. Standard Provision and Reporting Requirements.

The Administrator shall comply with all Standard Provisions and Reporting Requirements (Attachment C to the General Order) related to monitoring, reporting, and record keeping. General Order Attachment C is attached to this MRP as Attachment 2.

6.1.2. Electronic Reporting.

6.1.2.1. The Administrator shall submit electronic Self-Monitoring Reports (eSMRs) using the State Water Board’s California Integrated Water Quality System (CIWQS) Program [Website](#).

The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal. The Administrator shall maintain sufficient staffing and resources to ensure it submits eSMRs that are complete and timely. This includes provision of training and supervision of individuals (e.g., Administrator's personnel or consultant) on how to prepare and submit eSMRs.

- 6.1.2.2. The Administrator shall also submit all groundwater monitoring data to the State Water Board's Geographic Environmental Information Management System database ([GeoTracker](#)).
- 6.1.2.3. The Permittee shall submit updates to the NOI or Title 22 Engineering Report to the Regional Water Board at Northcoast@waterboards.ca.gov and to DDW at dwpdist18@waterboards.ca.gov.
- 6.1.2.4. In the event that an alternate method for submittal of electronic self-monitoring reports is required, the Administrator shall submit electronically via email to NorthCoast@waterboards.ca.gov or on disk (CD or DVD) in Portable Document Format (PDF) file in lieu of paper-sourced documents. The guidelines for electronic submittal of documents can be found on the Regional Water Board [website](#).

6.1.3. **Complete Reporting.**

All monitoring results reported shall be supported by the inclusion of the complete analytical report from the laboratory that conducted the analyses.

6.1.4. **Reporting Protocols.**

- 6.1.4.1. The Administrator shall report with each sample result the applicable ML, the RL, and the current Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. part 136. The Administrator shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:
 - 6.1.4.1.1. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
 - 6.1.4.1.2. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc.").

The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (\pm a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- 6.1.4.1.3. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
- 6.1.4.1.4. The Administrator is to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Administrator to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
- 6.1.4.2. Groundwater Reporting. Groundwater Monitoring reports shall be prepared by or under the supervision of a California Professional Civil Engineer or Geologist.

6.2. Annual Report

The Administrator shall submit an annual report to the Regional Water Board for each calendar year through the CIWQS Program Web site. The annual report shall be submitted by April 1st following the monitoring year. The annual report shall, at a minimum, include the following:

- 6.2.1. A cover letter included as an electronic attachment in CIWQS. The cover letter shall clearly identify whether the facility is operating in compliance with the General Order. The information contained in the cover letter shall clearly identify.
 - a. Facility name and address;
 - b. WDID number;
 - c. Applicable period of monitoring and reporting;
 - d. The transmittal letter shall contain the following penalty of perjury statement and shall be signed by the Administrator or the Administrator's authorized agent:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

- 6.2.2. All monitoring specified in this site-specific MRP under sections 2 through 5. When CIWQS does not provide for entry into a tabular format within the system, the Administrator shall electronically submit the data in a tabular format as an attachment. If the Administrator monitors any pollutant more frequently than required by this MRP, the results of this monitoring shall be included in the calculations and reporting of the data.
- 6.2.3. A summary table of all recycled water users, the status of the Recycled Water Use Permit for each User, and use areas shall be provided. Maps shall be included to identify use areas. Newly permitted recycled water Users and use areas shall be clearly identified. The Administrator shall maintain all Recycled Water User Agreements on file.
- 6.2.4. The volume of recycled water used by each user, by type of use(s) and any observations indicating non-compliance with the provisions of the General Order, the site-specific MRP, or NOA.
- 6.2.5. A summary of the freeboard measurement in any reservoir or pond containing recycled water where operating conditions necessitate a freeboard of less than two feet, or less than the pond's minimum design freeboard. The summary will include an explanation of the circumstances under which the reduced freeboard has occurred, the estimated minimum freeboard during the occurrence, and any permit noncompliance occurring as a result of the reduced freeboard.
- 6.2.6. A summary of all violations of the General Order, NOA, and this MRP, including a description of the requirement that was violated, and a description of and the severity of each violation; and actions taken to correct the violations and prevent future violations.
- 6.2.7. A summary of any operational problems, equipment or process malfunctions, including incidents of delivering recycled water that does not meet all recycled water quality requirements as established in NPDES Permit No. CA0025135 (currently WDR/NPDES Order No. R1-2016-0015 or future revisions thereto) and a detailed description of any corrective or preventative actions taken.
 - 6.2.7.1. Process or equipment failures triggering an alarm shall be recorded and maintained as a separate file. The recorded information must include the time and cause of failure and corrective action taken.
- 6.2.8. A summary table of all inspections, both conducted by the Administrator and by Users, and enforcement activities initiated by the Administrator. Include a discussion of compliance and the correction action(s) taken, as well as any planned or proposed actions needed to bring the discharge into compliance with the NOA, this MRP, and/or General Order. Copies of any enforcement actions taken by the Administrator shall be provided.

- 6.2.9. A summary of cross connection incidents as a part of the Administrator's cross connection control program management. Document how the cross connection is discovered, corrected, and when services are returned to the customer's site.
- 6.2.10. An evaluation of the performance of the recycled water treatment facility, including a discussion of capacity issues, system problems, and a forecast of the flows anticipated in the next year.
- 6.2.11. An evaluation of the non-dairy livestock watering use, including verification that the source control program, operational practices, and recycled water disinfection procedure described in the October 2021 *Engineering Report Addendum Production, Distribution, and Use of Recycled Water for Non-Dairy Livestock Watering* were implemented and maintained to ensure that the required chlorine residual was maintained at the point of delivery. The evaluation shall also include the free chlorine results, corrective actions taken when variations occurred, and the procedures followed to ensure that the recycled water use followed the disinfection requirements.
- 6.2.12. An evaluation of the hydraulic and nitrogen application rates at each uses site and a comparison to the agronomic rates calculated using real-time ETo data and as further described in Tables 5 through 13 on pages 13 through 21 of the April 2021 NOI located on the [City of Healdsburg website](https://ci.healdsburg.ca.us/DocumentCenter/View/13413/2021-Recycled-Water-User-Map) (<https://ci.healdsburg.ca.us/DocumentCenter/View/13413/2021-Recycled-Water-User-Map>) . If the data indicates that recycled water application rates are in excess of agronomic rates identified in the NOI and authorized by the NOA, the annual report shall also include a plan to ensure that agronomic rates identified in the NOI are not exceeded in the coming year.
- 6.2.13. A summary and evaluation of groundwater monitoring data as follows:
 - 6.2.13.1. A narrative description of the work conducted;
 - 6.2.13.2. Field notes and/or sampling logs documenting such activities as well purging and well recharge prior to sampling;
 - 6.2.13.3. An accurately scaled site plan showing all sampling points in relation to significant site features;
 - 6.2.13.4. Groundwater elevations plotted at the same scale as the site plan;
 - 6.2.13.5. Groundwater constituent concentrations plotted at the same scale as the site plan;
 - 6.2.13.6. Tabular results of the depth to groundwater measurements indicating the surveyed elevations of each reference point, depth to groundwater from the reference point, and the actual groundwater elevation;

- 6.2.13.7. Data tables summarizing all current and historical analytical data for the groundwater constituents of concern for each sampling location;
- 6.2.13.8. Graphical representations of trends of all available groundwater data.
- 6.2.14. The name, title, and 24-hour contact information for the recycled water operator responsible for operation, maintenance, and system monitoring.
- 6.2.15. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

6.3. **Non-compliance Reporting**

- 6.3.1. The Administrator shall notify the Regional Water Board, DDW, and the local health officer by telephone or email⁴ within one (1) business day of determining that untreated or partially treated wastewater has been delivered to a use area and cessation of the same. In circumstances where the emergency requires termination of delivery to Users, the Regional Water Board and DDW shall be copied on any correspondence concerning non-compliance between the Administrator and User. This requirement does not supersede notification requirements contained within WDR/WRR Order No. R1-2020-0012 (or any future revisions) which contain requirements for the production of recycled water.
- 6.3.2. The Administrator shall notify the Regional Water Board within one (1) business day of any violations of the General Order, NOA, and this MRP. A written submission shall be provided within five (5) business days of the time the Permittee becomes aware of the violation. The written submission shall include:
 - a. A description of the requirement that was violated, and a description of and the severity of each violation;
 - b. Actions taken or planned to correct the violation and prevent future violations; and
 - c. The proposed time schedule for corrective actions.

⁴ Telephone notifications to the Regional Water Board shall be made to 707-576-2687 and/or the assigned Regional Water Board staff person. Notifications to DDW shall be made to 707-576-2145 and/or dwpdist18@waterboards.ca.gov .

6.4. Recycled Water Spills

Notification and reporting of spills and unauthorized discharges of recycled water discharged in or on any waters of the state, as defined in Water Code section 13050, shall be conducted in accordance with the following:

6.4.1. Tertiary Recycled Water ⁵

- 6.4.1.1. For unauthorized discharges of 50,000 gallons or more of tertiary recycled water, the Administrator shall immediately notify the Regional Water Board as soon as (a) the Administrator has knowledge of the discharge or probable discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures.
- 6.4.1.2. For unauthorized discharges of more than 1,000 gallons, but less than 50,000 gallons of tertiary recycled water, the Administrator shall notify the Regional Water Board as soon as possible, but no longer than 3 days after becoming aware of the discharge.

6.5. Engineering Report.

The Engineering Report must be revised and submitted to DDW for review and acceptance, under any of the following circumstances:

- 6.5.1. **Addition of new dual-plumbed use areas.** Prior to delivery of recycled water, notification of new user sites for dual plumbed use areas shall be provided to DDW for review and approval as required by Title 22 sections 60313-60316.
- 6.5.2. **Addition of other new use types.** Prior to delivery of recycled water, the Engineering Report and NOI shall be revised or updated to reflect new use types that are not addressed in the current enrollment under the General Order.
- 6.5.3. **Changes in operations and recycled water management.** The Engineering Report and any applicable appendices shall be submitted to DDW for review and acceptance whenever there are changes in operations and recycled water program management.
- 6.5.4. Any updates or changes to the Engineering Report must be made in any application or documents submitted to the Regional Water Quality Control Board.

⁵ Tertiary Recycled Water means “disinfected tertiary 2.2 recycled water” as defined by DDW or wastewater receiving advanced treatment beyond disinfected tertiary 2.2 recycled water.

Ordered By: _____
Matthias St. John
Executive Officer

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ATTACHMENT 1 TO MRP ORDER NO. R1-2021-0028

SUMMARY OF RECYCLED WATER USE SITES

**City of Healdsburg
Recycled Water Users List**

Abbreviated name	User Name	Location APN / Address	Acreage	Recycled Water uses	Pipeline or Trucked	Current enrolled or Future
FCS	Ferrari Carano (Foley Family Vineyard), Storey Creek	110-110-021	130.5 (100 irrigated)	Vineyard Irrigation	Pipeline	Current
FCK	Ferrari Carano (Foley Family Vineyard), Kinley	089-190-010	41.5 (35 irrigated)	Vineyard Irrigation	Pipeline	Current
GB	Gallo, Bowtie	110-110-023 110-110-011	18.5 45.5 (36 irrigated)	Vineyard Irrigation	Pipeline	Current
GF	Gallo, Frost	110-110-022 110-110-023	57.8 18.5 (65 irrigated)	Vineyard Irrigation	Pipeline	Current
GD	Gallo, Del Rio	110-120-007 110-120-029	127.6 74.8 (172 irrigated)	Vineyard Irrigation	Pipeline	Current
CV	Carraro Vineyards (Portola Properties)	088-190-023 088-190-021	29 5	Vineyard Irrigation	Pipeline	Current
DLM	DeLaMontanya	110-130-022	5.5 (4 irrigated)	Vineyard Irrigation	Pipeline	Current
FJV	Frank Johnson Vineyards	110-130-033	63 (38 irrigated)	Vineyard Irrigation	Pipeline	Current
CM	Chris Mauritsen (CM Rock Ridge Vineyards)	13500 Rockpile Road	10	Vineyard Irrigation	Trucked	Current

**City of Healdsburg
Recycled Water Users List**

Abbreviated name	User Name	Location APN / Address	Acreage	Recycled Water uses	Pipeline or Trucked	Current enrolled or Future
FSV	Four Seasons (David McCloskey – Urban green development) (trucked)	710 Lytton Springs Road	8.2 (2 irrigated)	Vineyard Irrigation	Trucked	Current
RV	Rawah Vineyards	110-080-011	12	Vineyard Irrigation	Pipeline	Current
SIA	Syar Industries	3666 Healdsburg Avenue	63.9	Aggregate Processing	Pipeline	Current
PR	Palmer Ranch (Joan Palmer)	110-190-013 110-190-015	42 174	Vineyard Irrigation	Pipeline	Future
JB	Bucher Dairy Farm (John Bucher)	110180-036	353	Pasture (150 Ac) Vineyard Irrigation (40 Ac)	Pipeline	Future
GVA	Gary Van Acker	110-080-026 110-080-004	6 7.9	Hay	Pipeline	Future
PRW	Pine Ridge Winery	110-080-018	59	Vineyard Irrigation	Pipeline	Future
BR	Bishops Ranch	110-120-031	61	Landscape irrigation	Pipeline	Future
McRV	MacRostie Vineyards (Lion Nathan USA)	110-110-025	20	Vineyard Irrigation (13 Ac vineyard)	Pipeline	Future

**City of Healdsburg
Recycled Water Users List**

Abbreviated name	User Name	Location APN / Address	Acreage	Recycled Water uses	Pipeline or Trucked	Current enrolled or Future
SFV	Syar Family Vineyards	110-130-012 110-130-036 110-080-031 110-080-030 110-090-033 110-090-027 110-100-003 110-100-004 110-100-033 110-100-034	22.3 37.9 35 36.5 60 92 29 38.8 29.2 125.5	Vineyard Irrigation (approx 360 Ac vineyard)	Pipeline	Future
--	Oak Ridge Angus/La Franchi	120-010-009		Livestock Watering (~3 MG)	Trucked	Future
--	J-Brand	086-070-029		Livestock Watering (~0.3 MG)	Trucked	Future

ATTACHMENT 2 TO MRP ORDER NO. R1-2021-0028

**ATTACHMENT C to STATEWIDE GENERAL WATER RECLAMATION
REQUIREMENTS FOR RECYCLED WATER USE, ORDER WQ 2016-0068-DDW**

Standard Provisions and Reporting Requirements

**The Statewide General Water Reclamation Requirements for Recycled Water
Use may also be found on the State Waterboard [Website](https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2016/wqo2016_0068_ddw.pdf)
([https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_Qu
ality/2016/wqo2016_0068_ddw.pdf](https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2016/wqo2016_0068_ddw.pdf))**

ATTACHMENT C: STANDARD PROVISIONS AND REPORTING REQUIREMENTS
ORDER WQ 2016-0068-DDW
WATER RECLAMATION REQUIREMENTS
FOR RECYCLED WATER USE

A. GENERAL PROVISIONS

1. Duty to Comply

- a. An Administrator must comply with all of the conditions of this General Order and the MRP. Any General Order or MRP non-compliance constitutes a violation of the Water Code and/or Basin Plan and is subject to enforcement action.
- b. The filing of a request by the Administrator for a modification, revocation and reissuance, termination, a notification of planned changes, or anticipated non-compliance does not stay any General Order or MRP condition.

2. Duty to Mitigate

The Administrator shall take all reasonable steps to minimize or prevent any discharge in violation of this General Order which has a reasonable likelihood of adversely affecting public health or the environment, including such accelerated or additional monitoring as requested by the State or Regional Water Board to determine the nature and impact of the violation.

3. Property Rights

This General Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from liabilities under federal, state, or local laws.

4. Duty to Provide Information

The Administrator shall furnish, within a reasonable time, any information the Regional Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the General Order coverage. The Administrator shall also furnish to the Regional Water Board, upon request, copies of records required to be kept by its General Order.

5. Availability

A copy of this General Order, the NOA, and the MRP shall be maintained at the Administrator facilities and be available at all times to operating personnel.

B. GENERAL REPORTING REQUIREMENTS

1. Signatory Requirements

- a. All reports required by this General Order and other information requested by the Regional Water Board shall be signed by the Administrator principal owner or operator, or by a duly authorized representative of that person.

ATTACHMENT C: STANDARD PROVISIONS AND REPORTING REQUIREMENTS
ORDER WQ 2016-0068-DDW
WATER RECLAMATION REQUIREMENTS
FOR RECYCLED WATER USE

Duly authorized representative is one whose:

- 1) Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general manager in a partnership, manager, operator, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position), and
- 2) Written authorization is submitted to the Regional Water Board. If an authorization becomes no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements above must be submitted to the Regional Water Board prior to or together with any reports, information, or applications to be signed by an authorized representative.

b. Certification

All reports signed by a duly authorized representative under Provision C.1 shall contain the following certification:

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

2. Should the responsible reporting party discover that it failed to submit any relevant facts or that it submitted incorrect information in any report, it shall promptly submit the missing or correct information. All violations of any requirements in this General Order, including Uniform Statewide Recycling Criteria requirements shall be submitted in the annual self-monitoring reports.

3. False Reporting

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this General Order, including monitoring reports or reports of compliance or non-compliance shall be subject to enforcement procedures as identified in Section C of these Provisions.

ATTACHMENT C: STANDARD PROVISIONS AND REPORTING REQUIREMENTS
ORDER WQ 2016-0068-DDW
WATER RECLAMATION REQUIREMENTS
FOR RECYCLED WATER USE

C. ENFORCEMENT

1. The provision contained in this enforcement section shall not act as a limitation on the statutory or regulatory authority of the State and Regional Water Board.
2. Any violation of this General Order constitutes violation of the Water Code and regulations adopted thereunder, and are the basis for enforcement action, General Order termination, General Order revocation and reissuance, denial of an application for General Order reissuance, or a combination thereof.
3. The State and Regional Water Board may impose administrative civil liability, may refer a discharger to the State Attorney General to seek civil monetary penalties, may seek injunctive relief or take other appropriate enforcement action as provided in the Water Code for violation of this General Order.

ATTACHMENT B

DDW CONDITIONAL ACCEPTANCE LETTER, DATED FEBRUARY 25, 2021

State Water Resources Control Board Division of Drinking Water

February 25, 2021

Mr. Matthias St. John
Executive Officer
North Coast Regional Water Quality Control Board
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403-1072

CITY OF HEALDSBURG, WATER RECLAMATION TREATMENT FACILITY AND RECYCLED WATER USE AREAS; TITLE 22 ENGINEERING REPORT CONDITIONAL ACCEPTANCE (4990013-701)

Dear Mr. Matthias,

The City of Healdsburg (COH) submitted a Title 22 Engineering Report (Report), dated July 2020, with a subsequent revised Report dated January 2021. The Report describes the current and planned expansion of the recycled water (RW) uses and use areas, and consolidates information from earlier Title 22 Engineering Report(s) including updated information of the Water Reclamation Treatment Facility (WRTF). The COH submitted a revised Notice of Intent (NOI) to the Regional Water Quality Control Board in this regard. The COH's WRTF and RW program operates under Order No. R1-2016-0015 (NPDES Permit No. CA0025135) which stipulates the Water Recycling Requirements (WRRs) and Waste Discharge Requirements (WDRs) for authorized RW uses and/or discharges to Basalt Pond (part of Russian River).

Project Description

The WRTF receives wastewater from COH's sewer collection system that has 50% of the wastewater originating from residential services and remaining from commercial and industrial services. The industrial wastewater is mainly from viticulture use. The COH source control program regulates sewer discharges through ordinance(s) and NPDES permit. The influent flow received at WRTF undergoes screening and grit removal followed by biological process in aerobic, anoxic and pre-anoxic basins to remove biochemical oxygen demand (BOD) and nitrogen with subsequent membrane bioreactor (MBR) filtration provided by Siemens (Memcor Products) B40N 0.04-micron PVDF hollow fiber membrane process which has been accepted by Division of Drinking Water as an alternate treatment technology subject to design and operational limits for flux rate, maximum transmembrane pressure, integrity test(s) frequency, and operation and maintenance procedures.

Following MBR filtration the filtered water is disinfected with Trojan Technologies UV3000Plus system which has three banks installed in a single UV disinfection channel. Two banks are maintained in service and one bank as standby for peak and average flow conditions. The UV disinfection system has been validated for its performance and conditionally accepted by DDW with design conditions and operational controls. The delivered dose for the UV disinfection

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system is determined by the following equation, based on bioassay test(s) performed for inactivating bacteriophage MS2 using UV3000Plus system at different operating conditions of flow ranges, UVTs, and power settings (intensity of UV output).

$$\text{Log } D_{\text{Dose}} = - 4.63 - (0.70 \times \log \text{ Flow}) + (2.91 \times \log \text{ UVT}) + (1.09 \times \log \text{ Power})$$

Note: From Trojan Technologies UV3000plus Validation Report, Rev. 1.0 May 2007

The COH completed performance testing for the UV disinfection system upon installation, wherein two sets of samples were collected daily, for a period of 30-days, for microbiological analysis, TSS, and UVT upstream of the UV system, and one microbiological sample downstream of the UV system. Data was recorded for UV disinfection channel flow, operating hours of each UV bank, time of lamp cleaning, calculated UV intensity, total coliform count (MPN/100 ml), % UVT at 254 nm, and TSS in the UV disinfection channel influent. The UV performance test results were determined to be acceptable by DDW, in accordance with the design and operational requirements.

The disinfected RW from WRTF flows either to the Basalt Pond (Russian River) for discharge or to RW storage ponds for reuse. The RW pond(s) storage capacity is 39.6 MG and a pump station located on its south side discharges the RW to the distribution network. The existing use of RW irrigates approximately 900 acres, which is being planned for expansion to a minimum of additional 270 acres. The planned use(s) for RW include irrigation of pastures, cut hay, cannabis, orchards, and vineyards for frost protection. The earlier Report(s) submitted in 2010 and 2014 to 2016 (amendments), approved by DDW, included the existing RW uses for irrigation of vineyards, landscaping of golf course, parks, schools and cemeteries, aggregate processing, and trucked RW uses via fill stations for construction sites (soil compaction, dust control and other construction purposes), fire suppression, sanitary sewer cleaning, and street sweeping. The COH maintains a trucked RW fill station program that mandates permit application and RW use guidelines for the trucked RW users.

The State Water Resources Control Board, Division of Drinking Water (DDW) has reviewed the Report and deemed it to be conditionally acceptable. The existing WRTF is permitted for producing effluent of disinfected tertiary recycled water quality and its application is acceptable for current and planned RW uses in accordance with the Title 22, Recycling Water Criteria. DDW requests that the following provisions be included in the updated permits.

Recommended Provisions

General

1. The COH recycled water program must comply with all applicable requirements set forth in Titles 17 and 22 of the California Code of Regulations (CCR) for the production, distribution, and use of recycled water.
2. The WRTF's treatment capacity is limited to a maximum flow rate of 4 MGD (2776 GPM) with four membrane bio reactor (MBR) tanks in operation and one MBR tank as standby.
3. All recycled water produced at the RWTF must be filtered using the Evoqua (formerly Siemens) Memcor MBR B40N system as described in the Title 22 Engineering Report. No changes, additions, or modifications can be made to the facility unless approval is obtained from DDW and RWQCB.

4. The Evoqua (formerly Siemens) Memcor MBR B40N operational limits are for a maximum flux rate of 25 GFD and maximum transmembrane pressure of 7.2 PSI (50 KPa) as conditioned by DDW acceptance of this alternative filtration technological.
5. Per §60301.320(a), for RW passing through membranes, the filtered water turbidity must not exceed any of the following: (1) 0.2 NTU more than 5 percent of the time within a 24-hour period; and (2) 0.5 NTU at any time.
6. All MBR filtered water (permeate) must be disinfected using the Trojan UV3000Plus system as described in the Report in accordance with §60301.230(a)(2); a disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.

The UV system operation must meet the following conditions:

- a. Peak Flow rate <4 MGD (2788 GPM)
- b. UV Disinfection Channel Water Level relative to UV Lamps 0.45 in – 2.45 in.
- c. UVT of 65% @ 254 nm
- d. UV_{min} Dose of 80 µJ/cm²
- e. TSS < 5 mg/l (UV disinfection channel influent/MBR filtrate)
- f. All UV system sensors must be calibrated and following is recommended:
 - i. Have three calibrated standby sensors on hand.
 - ii. On a monthly basis, remove each duty sensor and replace with each calibrated standby sensor.
 - iii. Compare results.
 - iv. Send duty sensors back to manufacturer for calibration if the numbers are off by more than 10%. Install calibrated standby sensor in place of the duty sensor.

No changes, additions, or modifications can be made to the disinfection processes and facilities unless approval is obtained from DDW and RWQCB.

7. Per §60301.230(b), the median concentration of total coliform bacteria measured in the disinfected effluent must not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria must not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.
8. Per Articles 8, 9 and 10 of the RWC, Title 22 of CCR, COH must maintain the reliability features and contingency measures for WRF process at all times and ensure inadequately RW is not being delivered to the RW users.
9. The COH must provide a sufficient number of qualified personnel to operate the WRF effectively to achieve the required level of treatment at all times. Qualified personnel must be those meeting requirements to Division 7, Chapter 9 (commencing with Section 13625) of the California Water Code.
10. The COH must not bypass untreated or partially treated wastewater from the WRTF, or any intermediate unit processes, to the point of use. Excess flows and/or off spec process flows temporarily diverted to ponds must be returned to the headworks for full treatment.

Use Site Prohibition and Requirements

11. The application and use of disinfected tertiary recycled water must be in accordance with the Recycled Water Criteria, Title 22 of CCR. COH as the RW producer must ensure updated agreement(s) are maintained with the RW distributor(s) and user(s) as deemed

necessary to reflect upon current RW uses and practices and for the following to be adhered:

- a. An Engineering Report must be submitted to DDW and RWQCB for review and approval of any future use of RW or expansion of irrigated areas beyond those described in the approved Title 22 Engineering Report(s).
- b. Plans for future uses of RW or expanded irrigated areas, when available must be submitted to DDW and the County Department of Environmental Health (County DEH) for review and approval.
- c. No irrigation with or impoundment of RW can take place within 50 feet or 100 feet of any domestic water supply well.
- d. Any use of recycled water must comply with the following:
 - i. RW irrigation runoff must be confined to the recycled water use area unless the runoff does not pose a public health threat and is authorized by the regulatory agency.
 - ii. Spray, mist, or runoff must not enter dwellings, designated outdoor eating areas, or food handling facilities.
 - iii. Drinking water fountains must be protected against contact with recycled water spray, mist, or runoff.
- e. All recycled water use areas must be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide, that states the following: "RECYCLED WATER - DO NOT DRINK". Each sign must display an international symbol similar to that shown in figure 60310-A. DDW may accept alternative signage and wording, or an educational program, provided the applicant demonstrates to DDW that the alternative approach will assure an equivalent degree of public notification. These signs need to be placed in conspicuous places including at each entrance to the RW irrigated area.
- f. The planned new uses of RW include for frost protection at vineyards and for irrigation of cannabis. The COH shall coordinate with these RW users for ensuring their operation and irrigation practices include the following:

Frost Protection

- i. The RW user shall maintain an operations and maintenance protocol that addresses pre-season system inspections and testing, regular in-season system checks, checks during spray events that include checking for ponding and runoff, and logging of spray events. A cover crop shall be maintained between vineyard rows, to provide for retention capacity and limited treatment.
- ii. Frost protection use of recycled water shall occur on land that ranges from flat to limited slope area (< six percent), with vegetated buffers between the proposed frost protection areas and the surrounding property lines (as applicable).
- iii. Frost protection application of recycled water shall not occur during rainfall events.
- iv. Recycled water for frost protection shall be applied at rates that limit runoff.
- v. No overland flow of RW shall be permitted to leave the site. Runoff controls can be applied through a combination of design features and operational controls, by constructing physical controls such as berms and collection channels, with provision for removing any collected water and/or by using fairly flat buffer zones.

Cannabis

- i. The RW use for irrigation of Cannabis is considered similar to food crop irrigation, wherein the recycled water coming in contact with the edible portion

- of crop must be irrigated with disinfected tertiary recycled water pursuant to, §60304, CCR, Title 22.
- ii. The use of RW shall be ensured for the conditions stated in Item No. 11, sub-sections c, d and e.
 - g. No physical connection can be made or allowed to exist between the recycled water system and any separate system conveying potable water. If swivel-ell device is planned to be used, the construction plan must be submitted to DDW and RWQCB for review and approval.
 - h. The recycled water system in the irrigated areas must not include hose bibs. Only quick couplers that differ from those used on the potable water system can be used.
 - i. RW use sites shut down tests must be performed every four years and reuse site inspections must be performed annually. Each must be monitored by the County DEH or DDW. The inspections and testing must be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. A written report documenting the result of the inspection or testing for the prior year must be submitted to the County DEH and DDW within 30 days following completion of the inspection or testing.

Operations, Maintenance and Reporting

- 12. The COH must maintain a current operations plans for WRTF, which shall be submitted to DDW and RWQCB for approval upon any changes or modifications to WRTF process and /or its operations.
- 13. A preventive maintenance program must be maintained for the WRTF to ensure all equipment is kept in a reliable operating condition.
- 14. Operating records must be maintained at the WRTF or a central depository. The operating records must include: all analyses specified in the reclamation criteria; records of operational problems, plant and equipment breakdowns, and diversions to emergency storage or disposal; all corrective or preventive action taken.
- 15. Process or equipment failures triggering an alarm must be recorded and maintained as a separate record file. The recorded information must include the time and cause of failure and corrective action taken.
- 16. Any discharge of untreated or partially treated wastewater to the use area, and the cessation of same, must be reported immediately by telephone to the RWQCB, DDW, and the local health officer.

If you have any questions regarding this letter, please contact Mir Ali at (805) 566-9767 or via email at mir.ali@waterboards.ca.gov or me at (619) 525-4022 or via email at Randy.Barnard@waterboards.ca.gov.

Sincerely,

Randy Barnard

Randy Barnard, P.E.
Recycled Water Unit Chief
Recycled Water Unit
Division of Drinking Water



Digitally signed by Randy Barnard
Date: 2021.02.25 15:11:29 -08'00'

State Water Resources Control Board
1350 Front St., Rm. 2050
San Diego, CA 92101

cc:

Stefan Cajina, Northern California Section Regional Chief, State Water Resources Control Board – Division of Drinking Water (via email)

Janice Oakley, Sonoma District, State Water Resources Control Board – Division of Drinking Water (via email)

Aide Ortiz, Recycled Water Unit, State Water Resources Control Board – Division of Drinking Water (via email)

Cathleen Goodwin, North Coast Regional Water Quality Control Board

Patrick Fuss, Utility Engineer Manager, City of Healdsburg
(via email: pfuss@ci.healdsburg.ca.us)

RWU File

ATTACHMENT C

DDW CONDITIONAL ACCEPTANCE LETTER, DATED October 28, 2021

State Water Resources Control Board Division of Drinking Water

October 28, 2021

Mr. Matthias St. John
Executive Officer
North Coast Regional Water Quality Control Board
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403-1072

CITY OF HEALDSBURG, RECYCLED WATER REUSE FOR NON-DAIRY LIVESTOCK DRINKING; TITLE 22 ENGINEERING REPORT ADDENDUM CONDITIONAL ACCEPTANCE (4990013-701)

Dear Mr. St. John,

The City of Healdsburg (City) plans to include the use of disinfected tertiary recycled water for non-dairy livestock drinking in its recycled water program. Title 22 Engineering Report addendum (Report) dated, July 2021 and October 2021(revised) have been submitted to Division of Drinking Water (DDW) for this reuse. The addendum Report(s) amend the City's earlier Report(s), which were submitted in July 2020 and January 2021 and conditionally accepted by DDW on February 25, 2021. The earlier Reports consolidated the recycling water program's information for existing recycled water uses and user areas, and Water Reclamation Treatment facility (WRTF). The City operates its recycled water program under the requirements established by recycled water reuse order, WQ 2016-0068-DDW.

Project Description

The City plans to include the use of disinfected tertiary recycled water for non-dairy livestock drinking purposes. DDW is considering this reuse of recycled water taking into account the recommendations given by the National Water Research Institute's (NWRI) Independent Advisory Panel's (NWRI/IAP) Final Report dated, September 2018. The NWRI/IAP Report titled "Using Disinfected Tertiary Recycled Water (RW) for Non-Dairy Livestock Watering-A Human and Animal Health Evaluation for the State of California" recommends compliance with the following best management practices (BMPs) for the production and use of RW for non-dairy livestock drinking.

1. Require any recycle water system that provides RW for drinking to non-dairy livestock, to develop and maintain a targeted source control program that complies with the National Pre-treatment Program and includes technical based local limits to exclude wastewater inputs from slaughterhouses/abattoirs, zoos, and other significant source of animal waste, and to exclude concentrated industrial chemicals of concern.
2. Require any recycle water system that provides RW for drinking to non-dairy livestock, to achieve disinfection using an approved ultraviolet light (UV) system that meets disinfection criteria required as per Title 22 of CCR. The disinfection must when combined with the filtration process, be demonstrated to inactivate and/or remove

E. JOAQUIN ESQUIVEL, CHAIR | EILEEN SOBECK, EXECUTIVE DIRECTOR

99.999 percent of the plague forming F-specific bacteriophage MS2, or polio virus in the wastewater.

3. Require any recycle water system that provides RW for drinking to non-dairy livestock, to maintain an appropriate disinfection residual in the RW distribution system to prevent microbial growth. A free chlorine residual of 0.2 mg/l or total chlorine (chloramine) residual of 0.5 mg/l at the point of use is recommended to prevent the microbial regrowth.

The WRTF receives wastewater from commercial, industrial, institutional, and residential services with flow contributions of 30%, 5%, 2% and 63% respectively. The City is not required to have a pretreatment program based on federal regulatory (40 CFR, Part 403) requirements as it receives wastewater flow of less than 5 MGD. The City has its own source control program for overseeing discharges to the sewer collection system. This includes industrial waste surveys, City ordinance (No. 763), influent and effluent monitoring as per California Toxic Rule and Title 22 pollutants, inspection programs covered under Certified Unified Program Agency that minimize the risk associated with storage, use, handling and disposal of hazardous materials, Fats, Oil & Grease (FOG) user permitting program and industrial user permitting program. The Report states there are no concentrated industrial chemicals of concern, slaughterhouses, zoos, or other animal wastes identified in the surveys, inspections, and monitoring program. The WRTF influent sampling had constituents with trace amounts of certain analyte chemicals including disinfection by products but none were noted to be above limits, and none were traceable to industrial user(s). Most of the same analytes in WRTF effluent were non detect or detected but not quantified following the wastewater treatment process as shown in the concurrent effluent sampling and testing. The WRTF maintains contingency procedures for illicit waste discharges to the sewer collection system, which includes diversion and non- use of RW for the intended purpose(s) until it is investigated and confirmed to be compliant with the recycled water reuse criteria.

The WRTF's treatment process consists of influent screening, grit removal, aerobic, anoxic, and pre-anoxic basins to remove biochemical oxygen demand (BOD) and nitrogen, and membrane bioreactor (MBR) filtration using Siemens (Memcor Products) B40N 0.04-micron PVDF hollow fiber membranes. The MBR permeate is disinfected with Trojan Technologies UV3000Plus system which has three banks installed in a single UV disinfection channel. Two banks are maintained in service and one bank as standby for peak and average flow conditions. The UV disinfection system has been validated for its performance and conditionally accepted by DDW with design conditions and operational controls. The delivered dose for the UV disinfection system is determined by the following equation, based on bioassay test(s) performed for inactivating bacteriophage MS2 using UV3000Plus system at different operating conditions of flow ranges, UVTs, and power settings (intensity of UV output).

$$\text{Log } D_{\text{Dose}} = - 4.63 - (0.70 \times \log \text{Flow}) + (2.91 \times \log \text{UVT}) + (1.09 \times \log \text{Power})$$

Note: From Trojan Technologies UV3000plus Validation Report, Rev. 1.0 May 2007

The City performance tested the UV disinfection system upon installation and start-up, including a checkpoint bioassay. The UV system's performance test results were acceptable to DDW. The UV dose requirement was 80 mJ/cm² with End of Lamp Life (EOLL) factor of 0.98 (lamp life 9000 hours) with the use of Heraeus lamps in the UV system. However, recent study of Heraeus lamps has shown the EOLL factor is 0.91 with corresponding lamp life of 1200 hours. Due to the change in EOLL factor, the minimum UV dose that is required to be maintained is at least 86.08 mJ/cm² (0.98/0.91 = 1.076). The Report states that UV operation has been updated for maintaining the minimum UV dose delivery of 86.08 mJ/cm² including the minimum UV dose

Non-Dairy Livestock Recycled Water Drinking Use

alarm set point of 87 mJ/cm². The WRTF's membrane filtration in conjunction with UV disinfection is considered amenable in meeting the 5-log removal for viruses.

The City's existing RW uses are for irrigation of pastures, cut hay, cannabis, orchards, and vineyards for frost protection, landscape irrigation of golf course, parks, schools, and for aggregate processing. The City maintains a RW fill station program which requires a mandatory permit application and RW use guidelines for the RW trucked users. The existing use(s) of the RW, for the trucked supply from the fill station is for construction purposes (soil compaction, dust control and other construction activities), fire suppression, sanitary sewer cleaning, street sweeping, residential/commercial landscape irrigation, vineyard irrigation and cannabis irrigation. The proposed new use of RW for non-dairy livestock drinking will be supplied from the RW fill station. The tanker truck(s) will fill from the filling station and deliver to individual ranch sites, where it will be offloaded to onsite storage tank(s) and/or troughs. The proximity of proposed ranch sites for reuse is approximately 30 to 40 minutes from the fill station. The Report currently identifies two users with their locations who have requested RW for non-dairy livestock drinking purposes. The City expects additional users to be added to recycled water program in the future. The City will be coordinating with the tanker truck driver for ensuring the RW tanker truck is batch chlorinated at the time of fill up. Adequate dose of chlorine will be applied to the batch of RW to be trucked, taking into consideration the hauling time and requirement of maintaining at least 0.2 mg/l of free chlorine residual in the RW delivered at point of use. Each delivery of the tanker truck RW will be measured for free chlorine residual before leaving the fill station and before off loading at the use site. If free chlorine residual is less than 0.2 mg/l, City and/or the use site supervisor will be responsible for re-chlorinating and mixing the batch of trucked volume as many times as required to measure 0.2 mg/l free chlorine before off-loading. The City will inspect the user site(s) for storage and any piping arrangements, potential for spills, drainage and proximity to surface water, potential for cross connection and recycled water use signage and notification.

The State Water Resources Control Board, Division of Drinking Water (DDW) has reviewed the addendum Report(s) and deemed it to be conditionally acceptable. The existing WRTF is permitted for producing effluent of disinfected tertiary recycled water quality and its application is acceptable for the planned RW use in accordance with the Title 22, Recycling Water Criteria. DDW requests that the following provisions be included in the updated permits.

Recommended Provisions***General***

1. The City's recycled water program must comply with all applicable requirements set forth in Titles 17 and 22 of the California Code of Regulations (CCR) for the production, distribution, and use of recycled water.
2. The City must maintain its source control program and operational practices, which must be updated as and when deemed necessary for ensuring the RW delivered to non-dairy livestock for drinking purposes is always protected. Any changes made to the source control program and operational practices must be submitted to DDW and Regional Board for review.
3. The WRTF's process operation must be maintained for producing RW (membrane filtration and UV disinfection) of consistent and of reliable water quality that meets 5-log removal of virus. The following criteria must always be met:
 - a. The WRTF's treatment capacity must be limited to a maximum flow rate of 4 MGD (2776 GPM) with four membrane bio reactor (MBR) tanks in operation and one MBR tank as standby.

Non-Dairy Livestock Recycled Water Drinking Use

- b. All RW produced must be filtered using the Evoqua (formerly Siemens) Memcor MBR B40N system. No changes, additions, or modifications can be made to the facility unless approval is obtained from DDW and RWQCB.
- c. The Evoqua (formerly Siemens) Memcor MBR B40N operational limits are for a maximum flux rate of 25 GFD and maximum transmembrane pressure of 7.2 PSI (50 KPa) as conditioned by DDW acceptance of this alternative filtration technology.
- d. Membrane(s) filtered water turbidity must not exceed any of the following: (1) 0.2 NTU more than 5 percent of the time within a 24-hour period; and (2) 0.5 NTU at any time, Pursuant to §60301.320(a),
- e. All MBR filtered water (permeate) must be disinfected using the Trojan UV3000Plus system. Pursuant to §60301.230(a)(2), Title 22 of CCR, the UV disinfection process when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent (5-log) of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.
- f. The UV system's operation must meet the following conditions:
 - Peak Flow rate <4 MGD (2788 GPM)
 - UV Disinfection Channel Water Level relative to UV Lamps 0.45 in – 2.45 in.
 - UVT of 65% @ 254 nm
 - UV_{min} Dose of 86.08 mJ/cm²
 - TSS < 5 mg/l (UV disinfection channel influent/MBR filtrate)
 - All UV system sensors must be calibrated and following is recommended:
 - Have three calibrated standby sensors on hand.
 - On a monthly basis, remove each duty sensor and replace with each calibrated standby sensor.
 - Compare results.
 - Send duty sensors back to manufacturer for calibration if the numbers are off by more than 10%. Install calibrated standby sensor in place of the duty sensor.
 - Monitoring of lamp life hours (12000 hours) and timely replacement.No changes, additions, or modifications can be made to the disinfection processes and facilities unless approval is obtained from DDW and RWQCB.
- g. Per §60301.230(b), the median concentration of total coliform bacteria measured in the disinfected effluent must not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria must not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.
- h. Per Articles 8, 9 and 10 of the RWC, Title 22 of CCR, City must always maintain the reliability features and contingency measures for WRTF process and ensure inadequately RW is not being delivered to the RW users.
- i. The City must provide enough qualified personnel to operate the WRTF effectively to always achieve the required level of treatment. Qualified personnel must be those meeting requirements to Division 7, Chapter 9 (commencing with Section 13625) of the California Water Code.
- j. The City must not bypass untreated or partially treated wastewater from the WRTF, or any intermediate unit processes, to the point of use. Excess flows and/or off spec process flows temporarily diverted to ponds, delivered to the filling station and/or tanker truck(s) must be returned to the headworks for full treatment.

4. The application and use of RW must be in accordance with the Recycled Water Criteria, Title 22 of CCR. The City as the RW producer and supplier must ensure the permit(s) and agreement(s) are maintained with the RW user(s) and, updated as deemed necessary for the proposed RW use and best management practices. The City must ensure the following:
 - a. The batch of RW delivered to user site by the tanker truck must be checked for a free chlorine residual of at least 0.2 mg/l at the time of discharge to the user(s) facility (storage tank, trough).
 - b. The City must dose each RW tanker truck at the fill station upon filling with the required chlorine quantity to ensure a free chlorine residual of at least 0.2 mg/l is maintained in the RW delivered at the point of use. The initial chlorine and/or re-chlorination dose (if required) applied must consider the hauling time and other factors that can cause chlorine decay.
 - c. The City must ensure the RW delivered at the user site(s) is used only for non-dairy livestock drinking purpose, and the reuse must be limited to commercial poultry, non-dairy beef cattle, horses, mules, donkeys, non-dairy sheep, non-dairy goats, and swine. Any future RW use(s), change(s) to existing RW use(s) or user area(s), which is beyond what is described in the approved Engineering Report must be submitted in a new Engineering Report to DDW and RWQCB for review and approval.
 - d. Plans for future use(s) of RW or expansion of existing use area(s), when available must be submitted to DDW and the County Department of Environmental Health (County DEH) for review and approval.
 - e. The RW use at the user site(s) must not overflow, pond, pool, and/or cause surface runoff. The overflow and/or surface runoff must NOT result in:
 - Impoundment of RW to take place within 50 feet or 100 feet of any domestic water supply well.
 - The RW runoff must not enter dwellings, designated outdoor eating areas, or food handling facilities.
 - Contact with drinking water fountains.
 - f. All RW use areas and associated facilities such as the RW storage tank, trough(s), RW hauling tanker truck, etc. must be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide, that states the following: "RECYCLED WATER - DO NOT DRINK". Each sign must display an international symbol like that shown in figure 60310-A. DDW may accept alternative signage and wording, or an educational program, provided the applicant demonstrates to DDW that the alternative approach will assure an equivalent degree of public notification. These signs need to be placed in conspicuous places at the RW use site area(s).
 - g. No physical connection can be made or allowed to exist between the recycled water system (storage tank, trough, piping, etc.) and any separate system conveying domestic water. An air gap connection must be maintained for any domestic water connection that may be used for supplying to RW storage tank and/or trough at the user site area(s).
 - h. RW pipeline(s) at the use site area(s) must maintain minimum separation requirements, pursuant to Section 64572, Article 3, Chapter 16. California Waterworks Standards.
 - i. Pipeline(s), control valves and other appurtenances located at the RW use site areas must have identification markings and color coding. Purple color coding must be used, such as purple identification tape, or a purple polyethylene vinyl wrap color Pantone 522C to tag the RW pipelines and appurtenances.

- j. The RW user site area(s) must not use any hose bibs attached to the RW use facilities.
- k. The RW user site area(s) must be inspected for any cross connections prior to start of RW use, and annually thereafter. The inspection must be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. A written report documenting the result of the inspection or testing for the prior year must be submitted to the County DEH and DDW within 30 days following completion of the inspection or testing. Any backflow prevention device installed must be tested by a cross connection control specialist and for air gap, the installation drawing must be submitted to DDW and Regional Board for approval.

Operations, Maintenance and Reporting

5. The City must maintain a current operations plans for WRTF, which shall be submitted to DDW and RWQCB for approval upon any changes or modifications to WRTF process and /or its operations.
6. The City must maintain the RW disinfection procedure for the RW tanker truck, at the fill station and before disposal at user site. The RW disinfection procedure must be submitted to DDW and RWQCB for review and approval upon any changes.
7. The City in coordination with the user site supervisor must maintain record(s) of the free chlorine residual compliance in the RW delivered to the user site, corrective actions taken when variation is observed, and the procedures followed to ensure the RW use follows the requirements.
8. A preventive maintenance program must be maintained for the WRTF to ensure all equipment is kept in a reliable operating condition.
9. Operating records must be maintained at the WRTF or a central depository. The operating records must include: any illicit discharge(s) to sewer collection system, source control program monitoring and corrective measures, monitoring and analysis specified as per the reuse criteria; records of operational problems, plant and equipment breakdowns, and diversions to emergency storage or disposal; all corrective or preventive actions.
10. Process or equipment failures triggering an alarm must be recorded and maintained as a separate record file. The recorded information must include the time and cause of failure and corrective action taken.
11. Any discharge of untreated or partially treated wastewater to the use area, and the cessation of same, must be reported immediately by telephone to the RWQCB, DDW, and the local health officer.

If you have any questions regarding this letter, please contact Mir Ali at (805) 566-9767 or via email at mir.ali@waterboards.ca.gov or me at (818) 551-2046 or via email at Ginachi.Amah@waterboards.ca.gov.

Sincerely,

 Digitally signed by
Ginachi Amah
Date: 2021.11.04
19:47:13 -07'00'
Ginachi Amah, D. Env, P.E.
Recycled Water Unit Chief
Division of Drinking Water
[State Water Resources Control Board](#)

City of Healdsburg
Non-Dairy Livestock Recycled Water Drinking Use
500 North Central Avenue, Suite 500
Glendale, CA 91203

- 7 -

October 28, 2021

cc:

Stefan Cajina, Northern California Section Regional Chief, State Water Resources Control Board – Division of Drinking Water (via email)

Janice Oakley, Sonoma District, State Water Resources Control Board – Division of Drinking Water (via email)

Aide Ortiz, Recycled Water Unit, State Water Resources Control Board – Division of Drinking Water (via email)

Cathleen Goodwin, North Coast Regional Water Quality Control Board

Patrick Fuss, Utility Engineer Manager, City of Healdsburg
(via email: pfuss@ci.healdsburg.ca.us)

RWU File

ATTACHMENT D

STATEWIDE GENERAL WATER RECLAMATION REQUIREMENTS FOR RECYCLED WATER USE, ORDER WQ 2016-0068-DDW

The Statewide General Water Reclamation Requirements for Recycled Water Use may also be found on the [State Waterboard Website](https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2016/wqo2016_0068_ddw.pdf)
(https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2016/wqo2016_0068_ddw.pdf)



**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2016-0068-DDW**

**WATER RECLAMATION REQUIREMENTS
FOR RECYCLED WATER USE**

**Adoption Date
June 7, 2016**



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ACRONYMS AND ABBREVIATIONS	
AGR	Agricultural supply
Antidegradation Policy	State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California
AQUA	Aquaculture
Basin Plan	Water Quality Control Plan
BPTC	Best practicable treatment or control
CDPH	California Department of Public Health
CEC	Contaminants of Emerging Concern
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
DBP	Disinfection By-products
Delta	Sacramento-San Joaquin River Delta Estuary
DDW	Division of Drinking Water
DWR	Department of Water Resources
E. coli	Escherichia coli
e.g.	Latin <i>exempli gratia</i> (for example)
FRESH	Fresh water replenishment
gpd	gallons per day
GWR	Groundwater recharge
IND	Industrial service supply
mg/L	Milligrams per liter
MPN	Most Probable Number
MRP	Monitoring and Reporting Program
MUN	Municipal supply
MOA	Memorandum of Agreement
NOA	Notice of Applicability
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
pdf	Portable Document Format
PROC	Industrial process supply
REC-1	Water contact recreation
Regional Water Board	Regional Water Quality Control Board
State Water Board	State Water Resources Control Board
TBD	To Be Determined
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
Water Boards	State Water Board and Regional Water Boards
WILD	Wildlife habitat
WDRs	Waste Discharge Requirements
WRRs	Water Reclamation Requirements

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FINDINGS:

The State Water Resources Control Board (State Water Board) finds that:

BACKGROUND INFORMATION

1. On January 17, 2014, California's Governor proclaimed a [Drought State of Emergency](#) and directed state officials to take all necessary actions to prepare for drought conditions. On March 1, 2014, the Governor signed bipartisan drought relief legislation, Senate Bill (SB) 103 and 104, modifying the Budget Act of 2013 (Stats. 2013, ch. 20 and 354) to provide additional funds for drought relief. (Stats. 2014, ch. 2 and 3, respectively).
2. On April 25, 2014, the Governor proclaimed a continued State of Emergency due to severe drought conditions and directed the State Water Board to "adopt statewide general waste discharge requirements to facilitate the use of treated wastewater that meets standards set by the California Department of Public Health (CDPH) in order to reduce demand on potable water supplies."
3. California experiences frequent drought conditions. The recent emergency actions follow a similar Declaration of Statewide Drought in effect from 2008 through 2011 ([Executive Order S-06-08](#)) and Drought Declaration State of Emergency in effect from 2009 through 2011 ([Executive Order S-11-09](#)). Drought conditions in California also persisted from 1987 through 1992. Paleoclimatologists have reconstructed medieval climate episodes from tree ring studies, sediment deposition, and other sources. These studies show that the most severe droughts during the past 1,000 years have lasted from 20 to more than 150 years.¹
4. On June 3, 2014, the State Water Board adopted [Water Quality Order 2014-0090-DWQ](#), *General Waste Discharge Requirements for Recycled Water Use* to streamline permitting of recycled water use statewide.
5. Order WQ 2014-0090-DWQ was adopted to facilitate recycled water use and reduce demand on potable water supplies; this General Order further encourages recycled water projects by (1) maintaining the streamlined approach in permitting new Users through a water recycling program and (2) providing the option for a single recycled water use permit coverage for larger Users that typically need permit coverage from multiple Regional Water Boards. Enrollees issued a Notice of Applicability (NOA) under order WQ 2014-0090-DWQ must

¹ Michael Dettinger, *Droughts, Epic Droughts and Droughty Centuries—Lessons from California's Paleoclimatic Record: A PACLIM 2001 Meeting Report*, (Summer 2001) Interagency Ecological Program Newsletter, at p. 50.

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notify the State Water Board of its intention to be regulated under this General Order.

6. Prior to July 1, 2014, CDPH provided public health recommendations to the Water Boards through review and approval of Title 22 Engineering Reports prepared pursuant to California Code of Regulations, title 22, section 60323. The Water Boards then issue permits. Effective July 1, 2014, the administration of the Drinking Water Program, including responsibility for review of Title 22 Engineering Reports was transferred from the CDPH to the State Water Board.
7. "Recycled water" means water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource. (Wat. Code, § 13050(n).) Coverage under these Water Reclamation Requirements (WRRs) for Recycled Water Use (General Order) is limited to treated municipal wastewater for uses consistent with the Uniform Statewide Recycling Criteria, and other uses approved by the State Water Board on a case-by-case basis, other than direct or indirect potable uses. An estimated 1.85 to 2.25 million acre-feet of water supply could be realized annually through recycling by the year 2030.² Of this total amount, an estimated 0.9 million to 1.4 million acre-feet of recycled water could be realized through recycling of municipal wastewater that is discharged into the ocean or saline bays. Downstream beneficial uses will be protected by requiring compliance with Water Code section 1211, as described in the Antidegradation Analysis section of this General Order.
8. Recycled water use can help to reduce local water scarcity. It is not the only option for bringing supply and demand into a better balance, but it is a viable cost effective solution that is appropriate in many cases. The feasibility of recycled water use depends on local circumstances, which affect the balance of costs and benefits. In drought conditions, recycled water can be particularly valuable, given the scarcity of alternative supplies. In normal precipitation years recycled water use may reduce groundwater extraction.
9. The California Legislature has declared that a substantial portion of the future water requirements of the state may be economically met by beneficial use of recycled water. (Wat. Code, § 13511.) The Legislature also expressed its intent that the state undertakes all possible steps to encourage development of water recycling facilities so that recycled water may be made available to help meet the growing water requirements of the state. (Wat. Code, § 13512.)
10. On February 3, 2009, the State Water Board adopted [Resolution 2009-0011](#), Adoption of a Policy for Water Quality Control for Recycled Water (Recycled Water Policy) (Revised January 22, 2013, effective April 25, 2013.) The

² California Department of Water Resources, Bulletin 160-2009, p. 11-9.

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Recycled Water Policy promotes the use of recycled water to achieve sustainable local water supplies and reduce greenhouse gas emissions.

11. Water recycling is an essential part of an overall program to manage local and regional water resources. Many local governing bodies have adopted resolutions establishing their intent to proceed with planning, permitting, and implementation of recycled water projects. These projects will provide water supply and municipal wastewater disposal benefits for communities, and will provide water supply benefits to agriculture.
12. The Uniform Statewide Recycling Criteria was established for the protection of public health and are codified in the California Code of Regulations, title 22, division 4, chapter 3 (herein referred to as Uniform Statewide Recycling Criteria). Approved uses of recycled water under the Uniform Statewide Recycling Criteria depend on the level of treatment and potential for public contact. Under the Uniform Statewide Recycling Criteria, recycled water is categorized based on treatment levels. There are four categories of recycled water relevant to this General Order; they are listed here and defined in the indicated regulations section:
 - a. Undisinfected secondary recycled water (Cal. Code Regs., tit. 22, § 60301.900.)
 - b. Disinfected secondary-23 recycled water (Cal. Code Regs., tit. 22, § 60301.225.)
 - c. Disinfected secondary-2.2 recycled water (Cal. Code Regs., tit. 22, § 60301.220.)
 - d. Disinfected tertiary recycled water (Cal. Code Regs., tit. 22, § 60301.230.)

An approved Title 22 Engineering Report addressing protection of public health is required before authorization to use recycled water is granted by the Regional Water Board Executive Officer.

13. When used in compliance with the Recycled Water Policy, the Uniform Statewide Recycling Criteria , and all applicable state and federal water quality laws, the State Water Board finds that recycled water is safe for approved uses, and strongly supports recycled water as a safe alternative to raw and potable water supplies for approved uses.
14. This General Order authorizes beneficial, non-potable recycled water uses consistent with the Uniform Statewide Recycling Criteria and any additional requirements specified in the Notice of Applicability. Activities that are not authorized by this Order include:

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- a. Activities designed to replenish groundwater resources. Groundwater replenishment activities include surface spreading basins, percolation ponds, or injection through groundwater wells³.
 - b. Disposal of treated wastewater by means of percolation ponds, excessive hydraulic loading of recycled water in use areas, etc., where the primary purpose of the activity is disposal of treated wastewater.
 - c. Direct potable reuse (Wat. Code, § 13561(b)), indirect potable reuse for groundwater recharge (Wat. Code, § 13561(c)), or surface water augmentation (Wat. Code, § 13561(d)).
15. There are many sources of salts and nutrients in surface and groundwater, including water soluble inorganic and organic constituents in imported water, leaching of naturally occurring salts in soils as a result of irrigation and precipitation, animal wastes, fertilizers and other soil amendments, municipal use including water softeners, industrial wastewater, and oil field wastewater. In coastal areas and areas adjacent to the Sacramento-San Joaquin Delta, seawater intrusion is also a source of salinity in groundwater, particularly in over-drafted basins. Imported water is a major source of salt. In water year 2010, 45 percent of the surface water used in the San Joaquin Valley was imported from the Sacramento-San Joaquin Delta through the Delta Mendota Canal, Folsom South Canal, and California Aqueduct (DWR).⁴ In an average year, more than 800,000 tons of salt are imported from the Sacramento-San Joaquin River Delta Estuary (Delta) into the northern portion of the San Joaquin Valley, and another two million tons of salt are imported into the Tulare Lake Basin.⁵ Southern California also imports significant water supplies from the Delta. In addition, it imports 4.4 million acre-feet of water each year from the Colorado River. Colorado River water has, on average, twice the salinity of northern California water sources, and water imported from the Delta is blended with Colorado River supplies to control salinity. The use of recycled water for irrigation has the potential to increase salts and other constituents in groundwater, but is not expected to be a significant source of salt loading relative to other potential sources, particularly when recycled water is used in the same watershed in which it would otherwise be discharged. Basin-specific salt and nutrient management plans, however, will provide definitive information on where assimilative capacity is available.

3 Injection well is defined in Water Code 13051.

4 Water Recycling and Desalination Section, California Department of Water Resources.

5 Department of Water Resources, Water Facts-Salt Balance in the San Joaquin Valley <http://www.water.ca.gov/pubs/environment/salt_balance_in_the_san_joaquin_valley_water_facts_20_/water_facts_20.pdf>, accessed 3 April 2014.

16. Use of recycled water has the potential to increase nutrients in groundwater supplies. In order to minimize the nutrient loading, this Order requires that recycled water used for irrigation purposes be applied at agronomic rates.
17. The Recycled Water Policy calls on local water and wastewater entities together with other stakeholders who contribute salt and nutrients to a groundwater basin or sub-basin, to fund and develop Salt and Nutrient Management Plans to comprehensively address all sources of salts and nutrients. The State Water Board herein reasserts the need for comprehensive salt and nutrient management planning and directs that salinity and nutrient increases should be managed in a manner consistent with the Recycled Water Policy. It is the intent of the Recycled Water Policy that every groundwater basin/sub-basin in California ultimately has a consistent Salt and Nutrient Management Plan. The appropriate way to address salt and nutrient issues is through the development of regional or subregional Salt and Nutrient Management Plans.
18. The Recycled Water Policy includes monitoring requirements for Constituents of Emerging Concern⁶ (CECs) for the use of recycled water for groundwater recharge by surface and subsurface application methods. The monitoring requirements and criteria for evaluating monitoring results in the Recycled Water Policy are based on recommendations from a Science Advisory Panel.⁷ Because this General Order is limited to non-potable uses and does not authorize groundwater replenishment activities, monitoring for CECs is not required.
19. The Recycled Water Policy requires permits for landscape irrigation with recycled water to include priority pollutant monitoring at the recycled water production facility. Annual monitoring is required for design production flows greater than one million gallons per day; a five year monitoring frequency is required for flows less than one million gallons per day. Priority pollutants are listed in Appendix A of 40 Code of Federal Regulations (CFR) Part 423.

STATUTORY AND REGULATORY ISSUES

20. Pursuant to Water Code section 13523, the Regional Water Board, after consulting with and receiving the recommendation of the State Water Board, may prescribe water reclamation requirements for water that is used or proposed to be used as recycled water. The requirements shall be established in

6 For this Policy, CECs are defined to be chemicals in personal care products, pharmaceuticals including antibiotics, antimicrobials; industrial, agricultural, and household chemicals; hormones; food additives; transformation products, inorganic constituents; and nanomaterials.

7 The Science Advisory Panel was convened in accordance with provision 10.b of the Recycled Water Policy. The panel's recommendations were presented in the report; *Monitoring Strategies for Chemicals of Emerging Concern (CECs) in Recycled Water - Recommendations of a Science Advisory Panel*, dated June 25, 2010.

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conformance with the Uniform Statewide Recycling Criteria pursuant to Water Code section 13521. Pursuant to Water Code section 13523 (b), the requirements for use of recycled water not addressed by the Uniform Statewide Recycling Criteria will be considered on a case-by-case basis by Regional Water Boards, after consulting with and receiving the recommendations of the State Water Board. The State Water Board provides such recommendations through acceptance letters for Title 22 Engineering Reports. These recommendations become requirements of the Order when specified in the Notice of Applicability.

21. Pursuant to Water Code section 13528.5, the State Water Board may carry out duties and authority granted to a Regional Water Board pursuant to the Water Code, division 7, chapter 7, including the authority to prescribe water reclamation requirements pursuant to Water Code section 13523.
22. Pursuant to Water Code section 13241 and 13263, the State Water Board, in establishing the requirements contained herein, considered factors including, but not limited to, the following:
 - a. Past, present, and probable future beneficial uses of water;
 - b. Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto;
 - c. Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area;
 - d. Economic considerations;
 - e. The need for developing housing within the region(s); and
 - f. The need to develop and use recycled water.
23. Pursuant to Water Code section 106.5, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This General Order promotes that policy by encouraging uses of recycled water. Such uses must be consistent with the requirements of California Code of Regulations (including the Uniform Statewide Recycling Criteria). This General Order furthers the human right to water by encouraging use of recycled water thus reducing demand on other other sources, including use of potable water used for non-potable uses where recycled water is available.
24. Technical and monitoring reports specified in this General Order are required pursuant to Water Code section 13267. Failing to furnish the reports by the due date or falsifying information in the reports is a misdemeanor that may result in assessment of civil liabilities against the Discharger. Water Code section 13267 states, in part:

“In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is

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suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports. ... (f) the State Board may carry out the authority granted to a regional board pursuant to this section.”

The technical reports required by this General Order, the NOI, and the Monitoring and Reporting Program (MRP) are necessary to assure compliance with this General Order. The burden and cost of preparing the reports are reasonable and consistent with the best interest of the people of the state in maintaining water quality.

25. This General Order is applicable to recycled water projects where recycled water is used or transported for non-potable uses (for example: landscape irrigation, irrigation of crops and pasture land, construction, fire suppression, hydrostatic testing, etc.) This General Order does not regulate the treatment of wastewater. Compliance with this General Order does not relieve producers or distributors from the obligation to comply with applicable Waste Discharge Requirements (WDRs) for discharges from wastewater treatment plants, other than the recycled water uses described herein.
26. The uses of recycled water described in this General Order are exempt from the requirements of Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste in California Code of Regulations, title 27, division 2, subdivision 1, section 20005, et seq. The activities are exempt from the requirements of title 27 so long as the activity meets, and continues to meet, all preconditions listed below. (Cal Code Regs., tit. 27, § 20090.)
 - a. Sewage—Discharges of domestic sewage or treated effluent which are regulated by WDRs issued pursuant to California Code of Regulations, title 23, division 3, chapter 9, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludge or solid waste from wastewater treatment facilities shall be discharged only in accordance with the applicable State Water Board promulgated provisions of this division. (Cal. Code Regs., tit. 27, § 20090(a).)

- b. Wastewater—Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leach fields if the following conditions are met: (1) the applicable Regional Water Board has issued WDRs, reclamation requirements, or waived such issuance; (2) the discharge is in compliance with the applicable water quality control plan; and (3) the wastewater does not need to be managed according to, California Code of Regulations, title 22, division 4.5, chapter 11, as a hazardous waste. (Cal. Code Regs., tit. 27, § 20090(b).)
- c. Reuse – Recycling of other use of materials salvaged from waste or produced by waste treatment, such as scrap metal, compost, and recycled chemicals, provided that discharges of residual wastes from recycling or treatment operations to land shall be according to applicable provisions of Title 27 regulations.(Cal. Code Regs., tit. 27, § 20090(h).)

ANTIDegradation ANALYSIS

27. [State Water Board Resolution No. 68-16](#), the *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (the Antidegradation Policy) requires that disposal of waste into the waters of the state be regulated to achieve the highest water quality consistent with the maximum benefit to the people of the state. The quality of some waters is higher than established by adopted policies and that higher quality water shall be maintained to the maximum extent possible consistent with the Antidegradation Policy. The Antidegradation Policy requires the following:
- a. Higher quality water will be maintained until it has been demonstrated to the state that any change will be consistent with the maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of the water, and will not result in water quality less than that prescribed in the policies.
 - b. Any activity that produces a waste or may produce waste or increased volume or concentration of waste and discharges to existing high quality waters will be required to meet waste discharge requirements that will result in the best practicable treatment or control (BPTC) of the discharge necessary to assure pollution or nuisance will not occur, and the highest water quality consistent with the maximum benefit to the people of the state will be maintained.
28. This General Order regulates discharges to groundwater basins throughout the state. There is not sufficient data to determine which groundwater basins are high quality waters for the various constituents that may be associated with recycled water. To the extent use of recycled water may result in a discharge to a groundwater basin that contains high quality water, this General Order authorizes limited degradation consistent with the Antidegradation Policy as described in the findings below. Further, Salt and Nutrient Management Plans,

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developed in accordance with the Recycled Water Policy, will require analysis on an ongoing basis to evaluate inputs to the basin, the salt and nutrient mass balance, and the available assimilative capacity.

29. This General Order requires BPTC, which is a combination of treatment, storage, and application methods that implement the requirements of the Uniform Statewide Recycling Criteria and the Regional Water Board Water Quality Control Plans (Basin Plans). Recycled water is generated by treating (primarily) domestic wastewater adequately to make the water suitable for a direct beneficial use that would not otherwise occur. The required level of treatment corresponds to the proposed use of the recycled water. In addition, this General Order includes requirements regarding the storage and application of recycled water to protect water quality and limit public contact to recycled water, where appropriate. Wastewater treatment can be accomplished many different ways, but generally consists of physical, chemical, and/or biological methods. Depending upon the use of the recycled water, disinfection may be performed. In addition to the treatment processes, this General Order also requires the following control measures:
 - a. Recycled water use shall not cause unacceptable groundwater and/or surface water degradation.
 - i. Regional Water Boards have discretion regarding permitting storage of recycled water in unlined ponds. Applicants shall improve storage facilities if deemed necessary by a Regional Water Board.
 - ii. Application of recycled water is limited to agronomic rates, which limits the potential for significant amounts of recycled water to impact groundwater quality and allows plants to take up wastewater constituents such as nitrogen compounds.
 - iii. Recycled water use shall be controlled to prevent significant runoff from application areas. This General Order authorizes use of recycled water for application to land, where recycled water is further treated in natural soil processes.
 - b. Recycled water shall not create nuisance conditions.
 - i. The Uniform Statewide Recycling Criteria requires wastewater to be oxidized, which removes putrescible matter and requires dissolved oxygen. Maintaining dissolved oxygen in the wastewater will generally prevent nuisance odors.
 - ii. Application of recycled water is controlled to prevent airborne spray from entering dwellings, eating areas, or food handling areas.
 - iii. Application of recycled water to saturated soil is prohibited. Application to saturated soil reduces the soil treatment processes and may create conditions for mosquito breeding.

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- c. Recycled water shall only be used consistent with the Uniform Statewide Recycling Criteria and any other requirements specified in the Notice of Applicability.
 - i. A written approval of a Title 22 Engineering Report must be obtained from the State Water Board before a Notice of Applicability (NOA) can be issued.
 - ii. Uses of recycled water are subject to category-specific use area signage, and monitoring frequency requirements as specified in the Uniform Statewide Recycling Criteria. Uses not addressed by the Uniform Statewide Recycling Criteria will be considered on a case-by-case basis by Regional Water Boards , after consulting with and receiving the recommendations of the State Water Board. These recommendations become requirements of the Order when specified in the Notice of Applicability.
 - iii. Uses of recycled water are subject to backflow prevention, cross connection tests, and setback requirements for surface impoundments, wells, etc. as contained in the Uniform Statewide Recycling Criteria and California Code of Regulations, title 17, division 1, article 2.
30. In an arid climate, such as the climate that exists in most of California, the maximum benefit to the people of the state can only be achieved by ensuring long and short-term protection of economic opportunities, public health, and environmental protection. In order to do that, water uses must be better matched to water quality and use of local supplies must be encouraged to the extent possible, including reusing water that would otherwise flow to the ocean or other salt sinks without supporting beneficial uses during transmission. The use of recycled water in place of both raw and potable water supplies for the non-potable uses allowed under this General Order improves water supply availability and helps to ensure that higher quality water will continue to be available for human uses and for instream uses for fish and wildlife. It also reduces the need for groundwater pumping that has resulted in permanent loss of aquifer storage capacity and land subsidence in some parts of the state.

As required by the Antidegradation Policy, the State Water Board finds that the limited degradation of water that may occur as the result of recycling under the conditions of this General Order provides maximum benefit to the people of California, provided recycled water treatment and use are managed to ensure long-term reasonable protection of beneficial uses of waters of the state. Recycled water available for reuse under this General Order has been treated at a wastewater treatment plant to levels that comply with permits issued by the State Water Board or Regional Water Boards pursuant to the Clean Water Act for discharges to waters of the United States or the Porter Cologne Water Quality Control Act for discharges to land. Treatment technologies required under these

laws and permits include secondary and/or tertiary treatment and disinfection when needed for pathogen reduction.

The Uniform Statewide Recycling Criteria imposes limitations on the uses of recycled water, based on the level of treatment and the specific use in this General Order to protect public health. By restricting the use of recycled water to those meeting the Uniform Statewide Recycling Criteria, this General Order ensures that recycled water is used safely. To the extent that the use of recycled water may result in some waste constituents entering the environment after effective source control, treatment, and control measures are implemented, the conditions of this General Order limiting the use of recycled water to agronomic rates is part of the suite of treatment, storage and applications measures that comprise BPTC for uses with frequent or routine application, such as landscape or agricultural irrigation. Other types of uses that may be approved, such as dust control, firefighting, hydrostatic testing, and other short term or infrequent application are unlikely to result in sufficient loading of waste constituents that impact water quality.

31. Constituents associated with recycled water that have the potential to degrade groundwater include salinity, nutrients, pathogens (represented by coliform bacteria), disinfection by-products (DBPs), constituents of emerging concern (CECs), and endocrine disrupting chemicals (EDCs). If the discharge is not consistent with Basin Plan requirements, the applicant may elect to improve treatment to enroll under this General Order, or to apply for a site-specific order from the Regional Water Board. The State Water Board finds that the use of recycled water permitted under this General Order will not unreasonably affect beneficial uses or result in water quality that is less than that prescribed in applicable policies. The characteristics and requirements associated with each of the recycled water constituents of concern are discussed below:
 - a. Salinity is measured in water through various measurements, including but not limited to, total dissolved solids (TDS) and electrical conductivity. Excessive salinity can impair the beneficial uses of water. Salinity levels in the receiving water can be affected by the use of recycled water if the recycled water has elevated concentrations of salinity. However, it is anticipated that in most cases, the use of recycled water for irrigation will consist of a portion of the total applied irrigation water. Other sources of irrigation water are likely to be potable water, imported water, agricultural water supply wells, irrigation districts (surface water supplies), and precipitation. The blending of sources of irrigation water (e.g. recycled water blended with stormwater) will generally reduce concentrations of, and/or loading rates of salinity constituents. As a result, salinity increases in use areas where the irrigation water is a blend of water sources are less likely to impair an existing and/or potential beneficial use of groundwater.

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- b. Nitrogen is a nutrient that may be present in recycled water at a concentration that can degrade groundwater quality. This General Order requires application of recycled water to take into consideration nutrient levels in recycled water and nutrient demand by plants. Application of recycled water at agronomic rates and considering soil, climate, and plant demand minimizes the movement of nutrients below the plants' root zone. When applied to cropped (or landscaped) land, some of the nitrogen in recycled water will be taken up by the plants, lost to the atmosphere through volatilization of ammonia or denitrification, or stored in the soil matrix. As a result, nitrogen increases are unlikely to impair an existing and/or potential beneficial use of groundwater.
- c. Pathogens and other microorganisms may be present in recycled water based on the disinfection status. Coliform bacteria are used as a surrogate (indicator) because they are present in untreated wastewater, survive in the environment similar to pathogenic bacteria, and are easy to detect and quantify. Pathogens are generally limited in their mobility when applied to land.

Setbacks from recycled water use areas are required in the Uniform Statewide Recycling Criteria as a means of reducing pathogenic risks by coupling pathogen inactivation rates with groundwater travel time to a domestic water supply well or other potential exposure route (e.g. water contact activities). In general, a substantial unsaturated zone reduces pathogen survival compared to saturated soil conditions. Fine grained soil particles (silt or clay) reduce the rate of groundwater transport and therefore are generally less likely to transport pathogens. Setbacks also provide attenuation of other recycled water constituents through physical, chemical, and biological processes.

When needed, disinfection can be performed in a number of ways. The Uniform Statewide Recycling Criteria lists disinfection requirements for specifically listed activities.

- d. Disinfection by-products (DBPs) consist of organic and inorganic substances produced by the interaction of chemical disinfectants with naturally occurring substances in the water source. Common disinfection by-products include trihalomethanes, haloacetic acids, bromate, and chlorite. DBPs present in recycled water receive additional treatment when applied to land. Biodegradation, adsorption, volatilization, and other attenuative processes that occur naturally in soil will reduce the concentrations and retard migration of DBPs in the subsurface.
- e. Chemicals of Emerging Concern (CECs) in recycled water as they pertain to the State Water Board's Recycled Water Policy are defined to be chemicals in personal care products, pharmaceuticals including antibiotics, antimicrobials; industrial, agricultural, and household chemicals; hormones;

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food additives; transformation products, inorganic constituents; and nanomaterials. CECs are new classes of chemicals, diverse, and relatively unmonitored chemicals. Many of them are so new that standardized measurement methods and toxicological data for interpreting their potential human or ecosystem health effects are unavailable. The State Water Board convened a CEC Advisory Panel to address questions about regulating CECs with respect to the use of recycled water. The Panel's primary charge was to provide guidance for developing monitoring programs that assess potential CEC threats from various water recycling practices, including groundwater recharge/reuse and urban landscape irrigation. The Panel provided recommendations for monitoring specific CECs in recycled water used for groundwater recharge reuse. Monitoring of health-based CECs or performance indicator CECs is not required for recycled water used for landscape irrigation due to the low risk of ingestion of the water. These recommendations were made part of the Recycled Water Policy. This General Order does not provide coverage for groundwater recharge activities or production of recycled water.

- f. Endocrine disrupting chemicals (EDCs) are mostly man-made, found in various materials such as pesticides, metals, additives, or contaminants in food, and personal care products. Human exposure to EDCs occurs via ingestion of food, dust and water, via inhalation of gases and particles in the air, and through the skin. Perchlorate is an EDC that may be present in hypochlorite solutions, which is a type of disinfectant used for wastewater. Formation of perchlorate in hypochlorite solution can be minimized when proper manufacturing, handling, and storage conditions are followed. Perchlorate accumulation has been documented in fruit and seed bearing crops and leafy vegetation irrigated with perchlorate contaminated water. Recycled water currently makes up less than one percent of California agricultural water supply. Much of the recycled water used for agricultural irrigation is either undisinfected or is disinfected by means that do not result in perchlorate generation, such as ultraviolet light and chlorine gas. Some sources of agricultural water supply in some areas of the state contain perchlorate, such as surface water from Colorado River or groundwater sources in areas near industrial or military application sites (e.g. Riverside, San Bernardino, and Los Angeles counties). The blending of sources of irrigation water will further reduce any concentration of perchlorate present in recycled water and will be unlikely to affect beneficial uses or degrade groundwater quality.
32. The use of recycled water that would otherwise be discharged to a watercourse can adversely affect the availability of water for beneficial uses of water downstream of the discharge point, including in-stream uses. Water Code section 1211 requires that: (1) the owner of any wastewater treatment plant obtain the approval of the State Water Board before making any change in the

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point of discharge, place of use, or purpose of use of treated wastewater where changes to the discharge or use of treated wastewater have the potential to decrease the flow in any portion of a watercourse, and (2) the State Water Board review the proposed changes pursuant to the provisions of Water Code section 1700 *et seq.* In order to approve the proposed change, the State Water Board must determine that the proposed change will not operate to the injury of any legal user of the water involved. (Wat. Code, §1702.) The State Water Board also has an independent obligation to consider the effect of the proposed change on public trust resources and beneficial uses established for areas downstream of the discharge point, and to protect those resources where feasible. (*National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419 [189 Cal. Rptr. 346].)

33. This General Order authorizes uses of recycled water statewide. If an existing or proposed use of recycled water seeking coverage under this General Order could result in water quality degradation as described below, the Regional Water Board's Executive Officer shall notify the applicant/discharger of the need to either revise the proposed/existing project, or apply for or continue coverage under a site-specific order of the Regional Water Board. The Regional Water Board's Executive Officer or the State Water Board's Executive Director (or designee) shall explain the need for a revised project, design, operation, or coverage under a different order, by making one or more of the following findings in the NOI response letter:
 - a. The proposed use of recycled water is not consistent with Findings 27 through 32 of this General Order, which collectively provide for compliance with antidegradation findings for projects covered by this General Order. The degradation may be from salinity, nitrogen compounds, pathogens, disinfection by-products, or other substances.
 - b. The proposed method of recycled water storage in unlined ponds is not consistent with Findings 27 through 32 of this General Order, which collectively provide for compliance with antidegradation findings for projects covered by this General Order. The degradation may be from salinity, nitrogen compounds, pathogens, disinfection by-products, or other substances.
 - c. The proposed use of recycled water or method of recycled water storage will cause or contribute to pollution or nuisance, or otherwise fail to comply with the applicable Basin Plan or State Water Board plans or policies.
 - d. The proposed use of recycled water does not implement mitigation measures in a California Environmental Quality Act (CEQA) document.
 - e. The proposed use of recycled water is not consistent with a Total Maximum Daily Load (TMDL) waste load or load allocation, or implementation plan as adopted by the Regional Water Board and made part of the Regional Water Board's Basin Plan.

- f. The proposed use of recycled water is not consistent with the Basin Plan provisions for implementing a Salt and Nutrient Management Plan.

PURPOSE AND APPLICABILITY

34. The State Water Board recognizes the need for streamlined permitting consistent with the State Water Board's Recycled Water Policy. The State Water Board's intention in the issuance of this statewide order is to provide consistent regulation of non-potable uses of recycled water statewide. To provide such consistency, the State Water Board intends that regulatory coverage under an existing Regional Water Board general order or conditional waiver for non-potable uses of recycled water (landscape irrigation, golf course irrigation, dust control, street sweeping, etc.) will be terminated by the applicable Regional Water Board within three (3) years after adoption of this General Order. Enrollees covered by a Regional Water Board general order or conditional waiver for non-potable uses of recycled water may continue discharging under that authority until the applicable Regional Water Board issues a Notice of Applicability to an Administrator per the terms of this Order. Enrollees under Order WQ 2014-0090-DWQ will be transferred for coverage under this General Order.
35. This document serves as a statewide General Order authorizing the use of recycled water by Producers, Distributors, and Users for uses consistent with the Uniform Statewide Recycling Criteria, other than direct or indirect potable reuse. The intent of this General Order is to streamline the permitting process and delegate the responsibility of administering water recycling programs to an Administrator to the fullest extent possible. The following may apply for coverage under this General Order and agree to become the Administrator:
 - a. Producers of recycled water: Producers may be publicly or privately owned. A Producer will typically produce recycled water that meets the requirements of the Uniform Statewide Recycling Criteria. A Producer may also act as an Administrator.
 - b. Distributors of recycled water: In some cases, a Distributor may provide additional treatment (such as disinfection) to meet the Uniform Statewide Recycling Criteria for its intended use, and distribute it to Users. A Distributor is not required to take physical possession of the recycled water and may act simply as an Administrator.
 - c. Users of recycled water: Users take physical possession of the recycled water from Producers and/ or Distributors for an approved beneficial recycled water use consistent with Uniform Statewide Recycling Criteria. A User that takes physical possession of recycled water may act as an Administrator and distribute to other Users. Users of recycled water may also use the recycled water under a Water Recycling Use Permit from another Administrator.

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- d. A legal entity: A joint powers agreement or equivalent contractual agreement between a Producer, Distributor, irrigation district, or other entity. Similar to a Distributor, a legal entity is not required to take physical possession of the recycled water and may act simply as an Administrator.
36. To obtain coverage under this General Order, the applicant shall submit an NOI (Attachment A) and an application fee to the Regional Water Board of jurisdiction. An applicant proposing a water recycling program that covers recycled water use areas within multiple Regional Water Board jurisdictions may submit an NOI (Attachment A) and application fee to the State Water Board. Fee amounts are in accordance with California Code of Regulations, title 23, division 3, chapter 9, article 1. The applicant shall declare responsibility for the administration of the water recycling program authorized pursuant to this General Order. The applicant shall describe a program they will administer to ensure that recycled water use complies with the requirements of the Uniform Statewide Recycling Criteria, and this General Order. Upon authorization by the State or Regional Water Board, the applicant then becomes the Administrator. The Administrator shall be billed for an annual fee until coverage under the General Order is terminated.
37. Pursuant to Water Code section 13554.2, any person or entity proposing the use of recycled water shall reimburse the State Water Board for reasonable costs incurred in performing duties relevant to the implementation of regulatory oversight related to protection of public health for uses of recycled water.
38. This General Order does not authorize discharges of pollutants from point sources to water of the United States, thus the use of recycled water allowed pursuant to the terms of this General Order are not subject to National Pollutant Discharge Elimination System (NPDES) permits. To the extent that this General Order results in agricultural irrigation return flows entering waters of the United States, such return flows are not subject to NPDES permits (33 U.S.C., §1342(l)(1)) but may be subject to waste discharge requirements or conditional waivers as adopted by Regional Water Boards. Where such waste discharge requirements or conditional waivers exist, this General Order requires that uses of recycled water comply with their provisions.
39. The State Water Board recognizes the need to allow a centralized enrollment process under this General Order to facilitate opportunities for non-potable uses of recycled water by a single entity that may occur in more than one Regional Water Board jurisdictions (for example: hydrostatic testing of utility pipelines owned by a utility company or landscape irrigation at facilities managed by other state agencies). An NOI may be submitted to the State Water Board for such uses of recycled water, when managed by a single Administrator and subject to the corresponding recycled water quality, use area requirements, and reliability features.

40. Enrollment under this General Order may serve as additional authorization for new uses of recycled water presently not covered under existing WDRs, Master Reclamation Permits, or WRRs, as long as such new uses meet the requirements of this General Order and an approved Title 22 Engineering Report. A User that serves as an Administrator may use the additional authorization provided by this General Order to obtain recycled water from other Producers or Distributors permitted under other existing WDRs, Master Reclamation Permits, or WRRs.
41. Agricultural operations subject to waste discharge requirements or waivers of waste discharge requirements regulating discharges from irrigated lands may obtain authorization pursuant to this General Order to use recycled water for irrigation. Such authorization may take the form of a Water Recycling Use Permit from an Administrator covered by this General Order, or the agricultural operation may enroll as its own Administrator. The State Water Board recognizes the need to simplify regulation of recycled water use on agricultural lands. Pursuant to Water Code section 13267, Regional Water Boards' Executive Officers may modify the MRP to prevent duplication of monitoring and reporting activities that satisfy the requirements of both orders.

BASIN PLANS AND BENEFICIAL USES

42. Beneficial uses of groundwater are determined by each Regional Water Board and are listed in their respective Basin Plans. Beneficial uses for groundwater are: municipal supply (MUN), industrial service supply (IND), industrial process supply (PROC), fresh water replenishment (FRESH), aquaculture (AQUA), wildlife habitat (WILD), water contact recreation (REC-1), agricultural supply (AGR), and groundwater recharge (GWR). Some beneficial uses only apply to certain geographical areas within regions.
43. Basin Plans establish water quality objectives to protect beneficial uses. The water quality objectives may be narrative, numerical, or both. This General Order requires proposed recycled water uses to comply with Basin Plan requirements. Determination of compliance with the Basin Plan is part of the application process.

CEQA AND PUBLIC NOTICE

44. On April 25, 2014, the Governor issued an Executive Order declaring a continued state of emergency due to severe drought conditions. Directive No. 10 of the Executive Order directs the State Water Board to adopt statewide general waste discharge requirements to facilitate the use of treated wastewater that meets standards set by CDPH, in order to reduce demand on potable water supplies. Effective July 1, 2014 the authority to establish such standards was transferred from CDPH to the State Water Board. This General Order is intended to satisfy the Directive No. 10 requirement. Directive No. 19 of the Executive Order provides that the California Environmental Quality Act (CEQA)

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requirement to conduct an environmental review is suspended to allow the State Water Board to adopt this General Order as quickly as possible.

45. On November 13, 2015, the Governor issued an Executive Order (B-36-15) extending suspension of Division 13 (commencing with section 21000) of the Public Resources Code and regulations adopted pursuant to that Division in the January 17, 2014 Proclamation, April 25, 2014 Proclamation, and Executive Orders B-26-14, B-28-14, and B-29-15. The suspension will remain in effect until the drought state of emergency is terminated. The suspension also applies to the adoption of water reclamation requirements by the State Water Board that serve the purpose of paragraph 10 of the April 25, 2014 Proclamation.
46. The State Water Board has notified interested agencies and persons of its intent to prescribe these WRRs, and has provided them the opportunity to attend a public meeting and to submit their written views and recommendations.
47. The State Water Board, in a public meeting, heard and considered all comments pertaining to this matter.

IT IS HEREBY ORDERED that Order WQ 2014-0090-DWQ is hereby rescinded except for enforcement purposes, effective 60 calendar days after adoption of this General Order (“Effective Date”).

To enroll under this General Order, a prospective enrollee must file an NOI indicating its intention to be regulated under the provisions of this General Order, and receive authorization from the appropriate Regional Water Board. A prospective enrollee that intends to obtain authorization from multiple Regional Water Boards may file an NOI and receive authorization from the State Water Board.

To obtain coverage under this General Order, an enrollee under Order WQ 2014-0090-DWQ must notify the State Water Board of its intention to be regulated under this General Order. See Attachment A, “Who May Apply.” Coverage will terminate on the Effective Date for any existing enrollee that fails to submit the required documentation.

Pursuant to Water Code sections 13263, 13267, 13523 and 13523.1, enrollees under this Order, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, shall comply with the requirements in this Order.

A. PROHIBITIONS

1. The treatment, storage, distribution, or use of recycled water shall not cause or contribute to a condition of pollution as defined in Water Code section 13050(I) or nuisance as defined in Water Code section 13050(m).
2. Recycled water shall not be applied for irrigation during periods when soils are saturated.

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3. Recycled water shall not be allowed to escape from the use area(s) as surface flow that would either pond and/or enter surface waters, unless authorized by WDRs, waivers of WDRs, or conditional prohibitions regulating agricultural discharges from irrigated lands.
4. Spray or runoff shall not enter a dwelling or food handling facility and shall not contact any drinking water fountain, unless specifically protected with a shielding device. If the recycled water is undisinfected secondary or disinfected secondary-23 quality then spray or runoff shall not enter any place where public access is not restricted during irrigation.
5. The incidental runoff of recycled water shall not result in water quality less than that prescribed in water quality control plans or policies unless authorized through time schedule provisions in WDRs, waivers of WDRs, or conditional prohibitions regulating agricultural discharges from irrigated lands.

Recycled water shall not be discharged from treatment facilities, irrigation holding tanks, storage ponds, or other containment, other than for permitted use in accordance with this General Order; Regional Water Board issued WDRs, WRRs, or Master Reclamation Permits; NPDES permits; or a contingency plan in an approved Water Recycling Use Permit.

6. There shall be no cross-connection between potable water supply and piping containing recycled water. All Users of recycled water shall provide for appropriate backflow protection for potable water supplies as specified in California Code of Regulations, title 17, section 7604 or as determined by the State Water Board on a case-by-case basis to protect public health.
7. This General Order authorizes certain beneficial recycled water uses consistent with Uniform Statewide Recycling Criteria. The following activities are not authorized by this General Order:
 - a. Activities designed to replenish groundwater resources. Groundwater replenishment activities include surface spreading basins, percolation ponds, or injection through groundwater wells.
 - b. Disposal of treated wastewater by means of percolation ponds, excessive hydraulic loading of application areas, or any other method, where the primary purpose of the activity is the disposal of treated wastewater.
 - c. Direct potable reuse (Wat. Code, § 13561(b)), indirect potable reuse for groundwater recharge (Wat. Code, § 13561(c)), or surface water augmentation (Wat. Code, § 13561(d)).
8. The use of recycled water in violation of the applicable Regional Water Board's Basin Plan is prohibited.

B. SPECIFICATIONS

1. Recycled water distribution and use permitted under this General Order shall be in compliance with all of the following requirements:
 - a. Regulations related to recycled water (including its subsequent revisions) contained in California Code of Regulations, title 17, sections 7583 – 7586, sections 7601 – 7605, and California Code of Regulations, title 22, sections 60001 – 60355.
 - b. All requirements of this General Order.
 - c. An approved Title 22 Engineering Report that demonstrates or defines compliance with the Uniform Statewide Recycling criteria (and amendments).
 - d. The NOA issued by the Regional Water Board or State Water Board.
 - e. Applicable Salt and Nutrient Management Plan adopted by the Regional Water Board as a Basin Plan Amendment.
 - f. WDRs or NPDES permits for recycled water production facilities, to the extent that the WDRs or NPDES permits include provisions that address recycled water.
 - g. Any applicable water quality related CEQA mitigation measure.
 - h. Water Code section 1211 for facilities where the changes to the discharge are necessary to accomplish water recycling and will result in changes in flow in a watercourse.
 - i. Policy for Water Quality Control for Recycled Water (Recycled Water Policy)
2. The Administrator shall discontinue delivery of recycled water during any period in which it has a reason to believe that the quality of the delivered recycled water is not meeting the Uniform Statewide Recycling Criteria specification. The Administrator shall notify the Regional Water Board, and the State Water Board if it issued the NOA, within one (1) business day of determining that delivery of off-specification recycled water has taken place. In circumstances where the emergency requires termination of delivery to Users, the Regional Water Board, and the State Water Board if it issued the NOA, shall be copied on any correspondence concerning non-compliance between the Administrator and User. This notification does not supersede any notification requirements contained within a Producer's WDRs or Master Reclamation Permit for production facilities.
3. Uses of recycled water with frequent or routine application (for example: agricultural or landscape irrigation uses) shall be at agronomic rates and shall consider soil, climate, and plant demand. In addition, application of recycled water and use of fertilizers shall be at a rate that takes into consideration nutrient levels in recycled water and nutrient demand by plants. The State or Regional Water Board may require the Administrator to submit an Implementation or

Operations and Management Plan specifying agronomic rates and nutrient application for the use area(s) and a set of reasonably practicable measures to ensure compliance with this General Order. An Administrator may submit a nutrient management plan developed to comply with another Water Board's order, such as waste discharge requirements or a waiver regulating discharges from irrigated lands, in lieu of an Implementation or Operations and Management Plan. Other uses of recycled water that are infrequent (for example: dust control, firefighting, hydrostatic testing, etc.) must also be addressed by a set of reasonably practicable measures within an Implementation or Operations and Management Plan.

C. WATER RECYCLING ADMINISTRATION REQUIREMENTS

1. Applicants seeking coverage under this General Order shall submit an NOI in accordance with Attachment A. Responsibilities for an Administrator shall be described in the NOI.
2. Coverage under this General Order becomes effective when the State or Regional Water Board issues an NOA. The Regional Water Board and the State Water Board will coordinate to include Title 22 Engineering Report requirements and conditions of approval.
3. Under this General Order, the Administrator's program shall be implemented to accomplish compliance with Specification B.1. Upon State or Regional Water Board approval of the Administrator's program, which shall accompany the NOI, the Administrator may authorize and/or implement water recycling projects, in accordance with the Administrator's approved program and the approved Title 22 Engineering Report. The Administrator shall obtain written approvals for any changes to the Administrator's approved program, for example: new recycled water use types or distribution methods not already described in the Administrator's approved program.
4. The Administrator shall establish and enforce rules or regulations for recycled water uses governing the design and construction of recycled water use facilities and the use of recycled water in accordance with Specification B.1.
5. A User acting as a water recycling program Administrator is subject to the conditions of its water recycling program prepared in accordance with Specification B.1. A User acting as a water recycling program Administrator is responsible to implement water recycling administration requirements applicable to Users and Administrators as described in Water Recycling Administration Requirements C.1 – C.16.
6. The Administrator shall inspect to ensure that cross-connections between potable water and non-potable water systems have not been created and that backflow prevention devices are in proper working order by conducting or requiring User testing in accordance with the Uniform Statewide Recycling Criteria and California Code of Regulations, title 17, section 7605. Reports of

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testing and maintenance shall be maintained by the Administrator. The Administrator may use a third party agent to perform this task, however, the Administrator is solely responsible for compliance with conditions of this permit and the approved water recycling program.

7. The Administrator shall ensure recycled water meets the quality standards of this General Order and shall be responsible for the operation and maintenance of major transport facilities and associated appurtenances. If an entity other than the Administrator has actual physical and ownership control over the recycled water transport facilities, the Administrator may delegate operation and maintenance responsibilities for such facilities to that entity. The Administrator shall require the use of the recycled water to be in accordance with the Uniform Statewide Recycling Criteria and to comply with this General Order, including requirements to apply only at agronomic rates and not cause unauthorized degradation, pollution, or nuisance. If not the same entity, the Producer shall provide water quality data and communicate to Users the nutrient levels in the recycled water.
8. The Administrator shall conduct periodic inspections of the User's facilities and operations to determine compliance with conditions of the Administrator requirements and this General Order. The Administrator shall take whatever actions are necessary, including the termination of delivery of recycled water to the User, to correct any User violations. The Administrator may use a third party agent to perform this task, however, the Administrator is solely responsible for compliance with conditions of this permit and the approved water recycling program.
9. The Administrator shall comply with all applicable items of the attached Standard Provisions and Reporting Requirements (Attachment C) and any amendments thereafter.
10. The Administrator shall require Users to comply with the Administrator's use area conditions. Use area requirements shall be consistent with Specification B.1.
11. If recycled water will be transported by truck for uses consistent with the Uniform Statewide Recycling Criteria such as dust control, the Administrator shall provide notification and control measures for Users consistent with the provisions of the approved Title 22 Engineering Report that addresses protection of public health.
12. A copy of the Water Recycling Use Permit must be provided to Users by the Administrator (electronic format is acceptable). The Users must have the documents available for inspection by State and Regional Water Board staff, State/County officials, and/or the Administrator.
13. The Administrator shall comply with the attached monitoring and reporting program including any amendments issued by the entity that issued the NOA (State or Regional Water Board). This monitoring program shall be consistent with any applicable Salt and Nutrient Management Plan for the basin/sub-basin.

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The Administrator is responsible for collecting reports from Users. Where applicable, Users are responsible for submitting on-site observation reports and use data to the Administrator, who will compile and file an annual report with the entity that issued the NOA. The Administrator, at its discretion, may assume the User's responsibility for on-site observation reports and use data.

14. The Administrator and Users shall maintain in good working order and operate as efficiently as possible any facility or control system to achieve compliance with this General Order. The Administrator may use a third party agent to perform this task, however, the Administrator is solely responsible for compliance with conditions of this permit and the approved water recycling program.
15. The Administrator shall require that personnel receive training to assure proper operation of recycling facilities, worker protection, and compliance with this General Order. The Administrator shall require Recycled Water Supervisor(s) to be familiar with the Administrator permit conditions.
16. The Administrator shall assure that all above ground equipment, including pumps, piping, storage reservoir, and valves which may at any time contain recycled water are identified with appropriate notification as required by the Uniform Statewide Recycling Criteria and California Health and Safety Code section 116815. The Administrator may use a third party agent to perform this task, however, the Administrator is solely responsible for compliance with conditions of this permit and the approved water recycling program.

D. GENERAL PROVISIONS

1. The Administrator shall document compliance with all conditions of this General Order and requirements specified in the Uniform Statewide Recycling Criteria and California Code of Regulations title 17.
2. If directed by the State Water Board or a Regional Water Board pursuant to Water Code section 13267, an Administrator shall prepare and submit a Salt and Nutrient Management Plan, acceptable to the entity that issued such order, to ensure that the overall impact of permitted water recycling projects does not degrade groundwater resources in a manner inconsistent with Findings 27 through 32. Unless otherwise directed by the entity that issued such order, in lieu of developing an individual Salt and Nutrient Management Plan, the Administrator shall participate in a Regional Water Board's existing salt and nutrient management planning effort to meet the requirements of this provision.
3. State and/or Regional Water Board staff may conduct inspections/audits of water recycling projects. The Administrator and Users shall permit the State and/or Regional Water Board or its authorized representatives, in accordance with Water Code section 13267(c):

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- a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this General Order.
 - b. Access to and copy of, at reasonable times, any records that must be kept as a condition of this General Order.
 - c. Inspection, at reasonable times, of any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this General Order.
 - d. To sample or monitor, at reasonable times, for the purpose of assuring compliance with this General Order.
4. The State or Regional Water Board may terminate or modify an Administrator's coverage under this General Order for cause, including, but not limited to:
 - a. Violation of any term or condition contained in this General Order;
 - b. Obtaining this General Order by misrepresentation, or failure to disclose fully all relevant facts;
 - c. Endangerment to public health or environment that can only be mitigated to acceptable levels by General Order modification or termination.
 - d. An increase in recycle flows which causes a reduction of treated effluent flow from the wastewater treatment plant into a surface water body with beneficial uses dependent on flow without the approval of the Division of Water Rights.
 5. The State or Regional Water Board, upon a finding of non-compliance with this General Order, may revoke an Administrator's authority to issue Water Recycling Use Permits.
 6. The State Water Board will review this General Order periodically and may revise the requirements as deemed necessary.
 7. Users shall comply with all requirements of other applicable WDRs or waivers of WDRs, including without limitation WDRs or waivers regulating agricultural discharges from irrigated lands.
 8. The Administrators shall comply with the MRP issued with the NOA, as specified by the Regional Water Board's Executive Officer or State Water Board's Executive Director (or designee). A model MRP is provided as Attachment B. However, the State Water Board's Executive Director (or designee) may modify or replace the MRP when deemed necessary.

CERTIFICATION

The undersigned, Clerk to the State Water Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on June 7, 2016.

AYE: Chair Felicia Marcus
 Vice Chair Frances Spivy-Weber
 Board Member Tam M. Doduc
 Board Member Steven Moore
 Board Member Dorene D'Adamo

NAY: None

ABSENT: None

ABSTAIN: None



Jeanine Townsend
Clerk to the Board

STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2016-0068-DDW
WATER RECLAMATION REQUIREMENTS
FOR RECYCLED WATER USE

Attachments:

- A. Notice of Intent (NOI) - General Instructions
- B. Monitoring and Reporting Program
- C. Standard Provisions & Reporting Requirements
- D. Definition of Terms

ATTACHMENT A: NOTICE OF INTENT (NOI) – GENERAL INSTRUCTIONS
ORDER WQ 2016-0068-DDW
WATER RECLAMATION REQUIREMENTS
FOR RECYCLED WATER USE

WHO MAY APPLY

This Order is intended to serve as a statewide General Order for use of recycled water. It may be used to (1) replace waste discharge requirements (WDRs) / water reclamation requirements (WRR) , or a conditional waiver of WDRs; (2) serve as an additional authorization for new uses of recycled water not previously permitted, issued to any of the following:

- a. Producers of recycled water. Producers may be publicly or privately owned. A Producer will typically produce recycled water that meets the requirements of the Uniform Statewide Recycling Criteria. A Producer may also act as an Administrator.
- b. Distributors of recycled water. In some cases, a Distributor may provide additional treatment (such as disinfection) to meet the Uniform Statewide Recycling Criteria for its intended use, and distribute it to Users. A Distributor is not required to take physical possession of the recycled water and may act simply as an Administrator.
- c. Users of recycled water: Users take physical possession of the recycled water from a Producer or Distributor for an approved beneficial recycled water use consistent with the Uniform Statewide Recycling Criteria. Users may use the recycled water under a Water Recycling Use Permit from an Administrator or act as an Administrator.
- d. A legal entity such as a joint powers agreement or equivalent contractual agreement between a Producer, Distributor, irrigation district, or other entity. Similar to a Distributor, a legal entity is not required to take physical possession of the recycled water and may act simply as an Administrator.

Applicants that have been previously issued an order authorizing water recycling may be able to submit an abbreviated information package. Such applicants should contact Regional Water Board and State Water Board staff to determine the application information needs.

Enrollees covered under Order WQ 2014-0090-DWQ who wish to continue coverage must acknowledge in writing their consent to coverage under this General Order. Enrollees who submit the required documentation will automatically be covered under this General Order. The State Water Board will provide existing enrollees with a form for this purpose. A new NOI is not required if the project has not materially changed.

Any applicant whose NOI is pending on the date this General Order is adopted must update its NOI to request coverage under this General Order. If the NOI is approved before the Effective Date, the applicant will be enrolled in Order WQ 2014-0090-DWQ

ATTACHMENT A: NOI GENERAL INSTRUCTIONS
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until the Effective Date and coverage under this General Order will commence on the Effective Date.

WHERE TO APPLY

An applicant should submit an NOI to their applicable Regional Water Board and submit a Title 22 Engineering Report to the applicable State Water Board Division of Drinking Water Field Operations Branch office. The NOI cannot be considered complete until the responsible staff in the State Water Board provides a Title 22 Engineering Report approval letter. An Applicant proposing to administer a water recycling program that covers recycled water use areas within multiple Regional Water Board jurisdictions and is therefore seeking General Order coverage from multiple Regional Water Boards may submit an NOI to the State Water Board.

WHEN TO APPLY

An applicant should normally file the NOI at least 90 days prior to the project start.

WHAT TO FILE

The NOI shall include a water recycling program technical report containing the following information:

SECTION I - FACILITY/WASTE TREATMENT INFORMATION

Description of existing and/or proposed treatment, storage, and transmission facilities for water recycling (much of this may be from current orders/reports, but should be updated if necessary). This shall include the type and level of wastewater treatment for water recycling applications, estimated seasonal flows of recycled water, and a summary of monitoring data that describes the chemical, physical, and disinfection characteristics of the recycled water. A copy of the approved Title 22 Engineering Report and the corresponding State Water Board approval letter, shall be included in the submittal.

SECTION II – RECYCLED WATER APPLICATION

Describe how recycled water will be used. This should include the following information:

- a. Administrator owned/controlled uses
 1. An estimated amount of recycled water used at use area(s)

ATTACHMENT A: NOI GENERAL INSTRUCTIONS
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2. Relevant information regarding use type and use area (e.g. for agricultural irrigation use, provide information on irrigation type, acreage, and locations; for hydrostatic testing of utility pipelines, provide information on project locations, schedule/duration of testing, and type of utility pipeline; etc.).
 3. A proposed Implementation or Operations and Management plan (Plan). For uses with frequent or routine application (such as irrigation), the Plan shall specify agronomic rates and nutrient application for the use area(s) and a set of reasonably practicable measures to ensure compliance with this General Order. For uses with infrequent or non-routine applications, the Plan shall specify a list of practices to ensure compliance with this General Order. The Plan may include a water and nutrient budget for use area(s), site supervisor training, periodic inspections, or other appropriate measures. An Administrator may submit a nutrient management plan developed to comply with another Water Board order, such as waste discharge requirements or a waiver regulating discharges from irrigated lands, in lieu of an Implementation or Operations and Management Plan.
- b. Non-Administrator owned/controlled uses or contracted user applications (use areas that consist of small lots, e.g., residential/ industrial developments, roadway median irrigation, etc., may be aggregated to combine acreage for calculation purposes.)
1. List of Users receiving or proposing to receive recycled water (including a list of uses of recycled water for each User).
 2. An estimated amount of recycled water used at use area(s) of each User.
 3. A proposed Implementation or Operations and Management plan (Plan). For uses with frequent or routine application (such as irrigation), the Plan shall specify agronomic rates and nutrient application for the use area(s) and a set of reasonably practicable measures to ensure compliance with this General Order. For uses with infrequent or non-routine applications, the Plan shall specify a list of practices to ensure compliance with this General Order. The Plan may include a water and nutrient budget for use area(s), site supervisor training, periodic inspections, or other appropriate measures. This requirement does not apply to the extent Users are subject to WDRs or waivers of WDRs that require implementation of nutrient management plans.
 4. Descriptions/maps of use area(s).
 5. Method(s) of conveyance to Users.

SECTION III - DESCRIPTION OF WATER RECYCLING PROGRAM

The Administrator's water recycling program should be fully described as follows:

- a. Description of the Administrator agency's authority, rules, and/or regulations
- b. Design and implementation of program
- c. Cross-connection testing responsibilities and procedures
- d. Monitoring and Reporting Program
- e. Use area inspection program
- f. Operations and Maintenance program
- g. Compliance program
- h. Employee and User Training
- i. Emergency procedures and notification

SECTION IV - ADDITIONAL SITE SPECIFIC CONDITIONS

If existing orders have additional site specific conditions and/or restrictions not covered in the General Order, they shall be described here. If a CEQA document for the project was prepared, include a copy of the certified or adopted document(s).

SECTION V - WATER RECYCLING PROGRAM ADMINISTRATION

Describe organization and responsibilities of pertinent personnel involved in the water recycling program. Provide the name(s), title(s) and phone number(s) of contact person(s) who are charged with operation/oversight of the water recycling program. Identify all agencies or entities involved in the production, distribution, and use of recycled water, and include a description of legal arrangements, such as, but not limited to, charters, agreements, or Memorandum of Understanding. Copies of such legal documents and organizational charts may be useful.

ATTACHMENT B: MONITORING AND REPORTING PROGRAM
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WATER RECLAMATION REQUIREMENTS
FOR RECYCLED WATER USE

This monitoring and reporting program (MRP) describes requirements for monitoring a recycled water system. This MRP is issued pursuant to Water Code section 13267. The Administrator shall not implement any changes to this MRP unless and until a revised MRP is issued by the Regional Water Quality Control Board (Regional Water Board) Executive Officer.

The State Water Resources Control Board (State Water Board) and Regional Water Boards are transitioning to the paperless office system.

During the life of this General Order, the State Water Board or Regional Water Board may require the Administrator to electronically submit reports using the State Water Board's California Integrated Water Quality System (CIWQS) program or an alternative database. Electronic submittal procedures will be provided when directed to begin electronic submittals. Until directed to electronically submit reports, the Administrator shall submit hard copy reports.

In some regions, Administrators will be directed to submit reports (both technical and monitoring reports) to the State Water Board's GeoTracker database over the Internet in portable document format (pdf). In addition, analytical data shall be uploaded to the GeoTracker database under a site-specific global identification number. Information on the GeoTracker database is provided on the Internet at:

<http://www.waterboards.ca.gov/ust/electronic_submittal/index.shtml>

The Administrator has applied for and received coverage for the recycled water system that is subject to the notice of applicability (NOA) of Water Quality Order 2016-0068-DDW. The reports are necessary to ensure that the Administrator complies with the NOA and General Order. Pursuant to California Water Code section 13267, the Administrator shall implement this MRP and shall submit the monitoring reports described herein.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The name of the sampler, sample type (grab or composite), time, date, location, bottle type, and any preservative used for each sample shall be recorded on the sample chain of custody form. The chain of custody form must also contain all custody information including date, time, and to whom samples were relinquished. If composite samples are collected, the basis for sampling (time or flow weighted) shall be approved by Regional Water Board staff.

ATTACHMENT B: MONITORING AND REPORTING PROGRAM
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Field test instruments (such as those used to test pH, dissolved oxygen, and electrical conductivity) may be used provided that they are used by a California Environmental Laboratory Program (ELAP) certified laboratory or:

1. The user is trained in proper use and maintenance of the instruments;
2. The instruments are field calibrated prior to monitoring events at the frequency recommended by the manufacturer;
3. Instruments are serviced by the manufacturer or authorized representative at the recommended frequency; and
4. Field calibration reports are maintained and available for at least three years.

Monitoring requirements listed below may duplicate existing requirements under other orders including WDRs or waivers of WDRs that regulate agricultural discharges from irrigated lands. Duplication of sampling and monitoring activities are not required if the monitoring activity satisfies the requirements of this General Order. Collecting composite samples is acceptable in most cases. The facility may continue using existing sampling collection equipment that is consistent with the applicable facility order. However, due to short sample holding times, bacteriological samples collected to verify disinfection effectiveness must be grab samples. In addition to submitting the results under another order, the results shall be submitted in the reports required by this General Order.

All of the monitoring listed below may not be applicable to all recycled water projects. Consult the NOA or Regional Water Board staff to determine applicable requirements.

RECYCLED WATER MONITORING

If recycled water is used for irrigation of landscape areas¹, priority pollutant monitoring is required at the production facility. The frequency of monitoring corresponds to the flow rate of the recycled water use. Sampling shall be consistent with the following:

<u>Constituent</u>	<u>Treatment System Flow Rate</u>	<u>Sample Frequency</u>	<u>Reporting Frequency</u>
Priority Pollutants	< 1mgd	5 years	The next annual report.
	≥ 1mgd	Annually	Annually

¹ mgd denotes million gallons per day.

1 Landscape areas are defined as parks; greenbelts, playgrounds; school yards; athletic fields; golf courses; cemeteries; residential landscaping; common areas; commercial landscaping (except eating areas); industrial landscaping (except eating areas); freeway, highway, and street landscaping.

DISINFECTION SYSTEM MONITORING

If disinfection is performed, samples shall be collected from downstream of the disinfection system and analyzed by an approved laboratory per Title 22, section 60321(a). Depending upon the level of disinfection and recycled water application to land, monitoring requirements vary. Disinfection monitoring shall be customized to the site-specific conditions from the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sample Frequency</u>	<u>Reporting Frequency</u>
Total Coliform Bacteria	MPN/100 mL ^(a)	Grab	TBD ^(b)	TBD ^(c)
Turbidity	NTU ^(a)	Grab/Meter	TBD ^(b)	TBD ^(c)

^(a) MPN/100 mL denotes most probable number per 100 mL sample. NTU denotes nephelometric turbidity unit.

^(b) TBD (to be determined) shall be specified in the NOA or as required by California Code of Regulations, title 22 section 60321.

^(c) TBD (to be determined) shall be specified in the NOA or as required by CCR, title 22, section 60329(c).

POND SYSTEM MONITORING

In some cases, recycled water storage ponds may be used to store recycled water when it is not needed. These monitoring requirements apply only to ponds permitted through this General Order. Ponds covered by an existing order shall continue to be monitored in accordance with that order. Pond(s) containing recycled water shall be monitored for the following:

<u>Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sample Frequency</u> ^(a)	<u>Reporting Frequency</u>
Freeboard	0.1 feet	Measurement	Quarterly	Annually
Odors	--	Observation	Quarterly	Annually
Berm condition	--	Observation	Quarterly	Annually

^(a) Or less frequently if approved by the Regional Water Board Executive Officer

USE AREA MONITORING

The Administrator shall monitor use areas(s) at a frequency appropriate to determine compliance with this General Order and the Administrator's recycled water use program requirements. An Administrator may assign monitoring responsibilities to a User as part of the Water Recycling Use Permit program; the Administrator retains responsibility to ensure the data is collected, as well as prepare and submit the annual report.

ATTACHMENT B: MONITORING AND REPORTING PROGRAM
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The following shall be recorded for each user with additional reporting for use areas as appropriate. The frequency of use area inspections shall be based on the complexity and risk of each use area. Use areas may be aggregated to combine acreage for calculation or observation purposes. Use area monitoring shall include the following parameters:

<u>Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u> ^(a)	<u>Reporting Frequency</u>
Recycled Water User	--	--	--	Annually
Recycled Water Flow	gpd ^(b)	Meter ^(c)	Monthly	Annually
Acreage Applied ^(d)	Acres	Calculated	--	Annually
Application Rate	inches/acre/year	Calculated	--	Annually
Soil Saturation/Ponding	--	Observation	Quarterly	Annually
Nuisance Odors/Vectors	--	Observation	Quarterly	Annually
Discharge Off-Site	--	Observation	Quarterly	Annually
Notification Signs ^(e)	--	Observation	Quarterly	Annually

^(a) Or less frequently if approved by the Regional Water Board Executive Officer.

^(b) gpd denotes gallons per day.

^(c) Meter requires meter reading, a pump run time meter, or other approved method.

^(d) Acreage applied denotes the acreage to which recycled water is applied.

^(e) Notification signs shall be consistent with the requirements of California Code of Regulations, title 22, section 60310 (g).

COOLING/INDUSTRIAL/OTHER USES OF RECYCLED WATER

If recycled water is used for industrial, commercial cooling, or air conditioning in which a mist is generated, the cooling system shall comply with California Code of Regulations, title 22, section 60306 (c).

DUAL PLUMBED RECYCLED WATER SYSTEMS

If dual plumbed recycled water systems are proposed, consult with State Water Board for additional reporting, design, and operation requirements. The frequency of testing for cross connection and backflow prevention devices shall be as listed below or more frequently if specified by State Water Board.

<u>Requirement</u>	<u>Frequency</u>	<u>Reporting Frequency</u>
Cross Connection Testing	Four Years ^(a)	30 days/Annually ^(b)
Backflow Incident	--	24 hours from discovery
Backflow Prevention Device Testing and Maintenance	Annually ^(c)	Annually

ATTACHMENT B: MONITORING AND REPORTING PROGRAM
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- ^(a) Testing shall be performed at least every four years, or more frequently at the discretion of the State Water Board Division of Drinking Water.
- ^(b) Cross connection testing shall be reported pursuant to California Code of Regulations, title 22, section 60314. The report shall be submitted to State Water Board within 30 days and included in the annual report to the Regional Water Board.
- ^(c) Backflow prevention device maintenance shall be tested by a qualified person as described in California Code of Regulations, title 17, section 7605.

REPORTING

In reporting monitoring data, the Administrator shall arrange the data in tabular form so that the date, data type (e.g., flow rate, bacteriological, etc.), and reported analytical or visual inspection results are readily discernible. The data shall be summarized to illustrate compliance with this General Order and NOA as applicable. The results of any monitoring done more frequently than required at the locations specified in the MRP shall be reported in the next regularly scheduled monitoring report and shall be included in calculations as appropriate.

During the life of this General Order, the State Water Board or Regional Water Board may require the Administrator to electronically submit reports using the State Water Board's California Integrated Water Quality System (CIWQS) program or an alternative database. Electronic submittal procedures will be provided when directed to begin electronic submittals. Until directed to electronically submit reports, the Administrator shall submit hard copy reports.

A. Annual Report

Annual Reports shall be submitted to the Regional Water Board by **April 1st following the monitoring year**. The Annual Report shall include the following:

1. A summary table of all recycled water Users and use areas. Maps may be included to identify use areas. Newly permitted recycled water Users and use areas shall be identified. When applicable, supplement to the Title 22 Engineering Report and the State Water Board approval letter supporting those additions shall be included.
2. A summary table of all inspections and enforcement activities initiated by the Administrator. Include a discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into compliance with the NOA and/or General Order. Copies of documentation of any enforcement actions taken by the Administrator shall be provided.
3. An evaluation of the performance of the recycled water treatment facility, including discussion of capacity issues, system problems, and a forecast of the flows anticipated in the next year.

ATTACHMENT B: MONITORING AND REPORTING PROGRAM
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4. Tabular and graphical summaries of all monitoring data collected during the year, including priority pollutant monitoring, if required.
5. The name and contact information for the recycled water operator responsible for operation, maintenance, and system monitoring.

A letter transmitting the annual report shall accompany each report. The letter shall summarize the numbers and severity of violations found during the reporting period, and actions taken or planned to correct the violations and prevent future violations. The transmittal letter shall contain the following penalty of perjury statement and shall be signed by the Administrator or the Administrator's authorized agent:

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of the those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”

The Administrator shall implement the above monitoring program.

ATTACHMENT C: STANDARD PROVISIONS AND REPORTING REQUIREMENTS
ORDER WQ 2016-0068-DDW
WATER RECLAMATION REQUIREMENTS
FOR RECYCLED WATER USE

A. GENERAL PROVISIONS

1. Duty to Comply

- a. An Administrator must comply with all of the conditions of this General Order and the MRP. Any General Order or MRP non-compliance constitutes a violation of the Water Code and/or Basin Plan and is subject to enforcement action.
- b. The filing of a request by the Administrator for a modification, revocation and reissuance, termination, a notification of planned changes, or anticipated non-compliance does not stay any General Order or MRP condition.

2. Duty to Mitigate

The Administrator shall take all reasonable steps to minimize or prevent any discharge in violation of this General Order which has a reasonable likelihood of adversely affecting public health or the environment, including such accelerated or additional monitoring as requested by the State or Regional Water Board to determine the nature and impact of the violation.

3. Property Rights

This General Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from liabilities under federal, state, or local laws.

4. Duty to Provide Information

The Administrator shall furnish, within a reasonable time, any information the Regional Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the General Order coverage. The Administrator shall also furnish to the Regional Water Board, upon request, copies of records required to be kept by its General Order.

5. Availability

A copy of this General Order, the NOA, and the MRP shall be maintained at the Administrator facilities and be available at all times to operating personnel.

B. GENERAL REPORTING REQUIREMENTS

1. Signatory Requirements

- a. All reports required by this General Order and other information requested by the Regional Water Board shall be signed by the Administrator principal owner or operator, or by a duly authorized representative of that person.

ATTACHMENT C: STANDARD PROVISIONS AND REPORTING REQUIREMENTS
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Duly authorized representative is one whose:

- 1) Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general manager in a partnership, manager, operator, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position), and
- 2) Written authorization is submitted to the Regional Water Board. If an authorization becomes no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements above must be submitted to the Regional Water Board prior to or together with any reports, information, or applications to be signed by an authorized representative.

b. Certification

All reports signed by a duly authorized representative under Provision C.1 shall contain the following certification:

“I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

2. Should the responsible reporting party discover that it failed to submit any relevant facts or that it submitted incorrect information in any report, it shall promptly submit the missing or correct information. All violations of any requirements in this General Order, including Uniform Statewide Recycling Criteria requirements shall be submitted in the annual self-monitoring reports.

3. False Reporting

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this General Order, including monitoring reports or reports of compliance or non-compliance shall be subject to enforcement procedures as identified in Section C of these Provisions.

C. ENFORCEMENT

1. The provision contained in this enforcement section shall not act as a limitation on the statutory or regulatory authority of the State and Regional Water Board.
2. Any violation of this General Order constitutes violation of the Water Code and regulations adopted thereunder, and are the basis for enforcement action, General Order termination, General Order revocation and reissuance, denial of an application for General Order reissuance, or a combination thereof.
3. The State and Regional Water Board may impose administrative civil liability, may refer a discharger to the State Attorney General to seek civil monetary penalties, may seek injunctive relief or take other appropriate enforcement action as provided in the Water Code for violation of this General Order.

ATTACHMENT D: DEFINITION OF TERMS
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Definitions noted with () are from the Uniform Statewide Recycling Criteria. The definitions are provided in this Attachment for convenience and are subject to revisions should the codes are formally revised. Please refer to the formal published codes [Health & Safety Code or Title 22 of the California Code Regulations] to obtain the latest version.*

Administrator: An Administrator is an entity (Producer, Distributor, User, or legal entity) that submits an NOI and application fee to the Regional Water Board for coverage under this General Order. An Administrator may issue use permits for uses of recycled water consistent with the Uniform Statewide Recycling Criteria. An Administrator is responsible for coordinating, collecting data, and reporting the monitoring reports to the Regional Water Board.

Agronomic Rates: The rate of application of recycled water to plants necessary to satisfy the plants' evapotranspiration requirements, considering allowances for supplemental water (e.g., effective precipitation), irrigation distribution uniformity, and leaching requirement, thus minimizing the movement of nutrients below the plants' root zone.

Coagulated Wastewater *: Oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated upstream from a filter by the addition of suitable floc-forming chemicals.

Conventional Treatment *: A treatment chain that utilizes a sedimentation unit process between the coagulation and filtration processes and produces an effluent that meets the definition for disinfected tertiary recycled water.

Disinfected Secondary-23 *: Recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 23 per 100 milliliters using the bacteriological results of the last seven days for which analyses have been completed, and the number of coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30 day period.

Disinfected Secondary-2.2 *: Recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of coliform organisms does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period.

Disinfected Tertiary Recycled Water *: A filtered and subsequently disinfected wastewater that meets the following criteria:

- (a) The filtered wastewater which has been disinfected by either:

ATTACHMENT D: DEFINITION OF TERMS
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- (1) A chlorine disinfection process following filtration that provides a contact time (CT, the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or
 - (2) A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.
- (b) The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

Disinfected Wastewater *: Wastewater in which the pathogenic organisms have been reduced by chemical, physical or biological means. For the purposes of this General Order, disinfected wastewater is safe for use when applied consistent with the requirements of the Uniform Statewide Recycling Criteria.

Distributor: A private or public agency which receives recycled water from a Producer for the purpose of distribution to Users. In some cases, a distributor may provide additional treatment (such as disinfection) to meet the Uniform Statewide Recycling Criteria for its intended use, and distributes it to Users. A Distributor may not take physical possession of the recycled water and may act simply as an Administrator.

Dual Plumbed System *: A system that utilizes separate piping systems for recycled water and potable water within a facility and where the recycled water is used for either of the following purposes:

- a) To serve plumbing outlets (excluding fire suppression systems) within a building or
- b) Outdoor landscape irrigation at individual residences.

Filtered Wastewater *: An oxidized wastewater that meets the criteria in the subsection 1 or 2:

- (1) Has been coagulated and passed through natural undisturbed soils or a bed of filter media pursuant to the following:
 - a. At a rate that does not exceed 5 gallons per minute per square foot of surface area in mono, dual or mixed media gravity, upflow or pressure filtration systems, or does not exceed 2 gallons per minute per square foot of surface area in travelling automatic backwash filters; and

b. So that the turbidity of the filtered wastewater does not exceed any of the following:

- i. An average 2 NTU within a 24-hour period;
- ii. 5 NTU more than 5 percent of the time within a 24-hour period; and
- iii. 10 NTU at any time

(2) Has been passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane so that the turbidity of the filtered wastewater does not exceed any of the following:

- a. 0.2 NTU more than 5 percent of the time within a 24-hour period; and
- b. 0.5 NTU at any time

F-specific bacteriophage MS-2 *: A strain of a specific type of virus that infects coliform bacteria that is traceable to the American Type Culture Collection (ATCC 15597B1) and is grown on lawns of E. Coli (ATCC 15597).

Incidental Runoff: Unintended small amounts (volume) of runoff from recycled water use areas, such as unintended, minimal over-spray from sprinklers that escapes the recycled water use area. Water leaving a recycled water use area is not considered incidental if it is part of the facility design, if it is due to excessive application, if it due to intentional overflow or application, or if it is due to negligence.

Legal Entity: A legal entity is an entity formed by a legal document (such as a joint powers agreement or equivalent contractual agreement) between a Producer, Distributor, irrigation district, or other entity. Similar to a Distributor, a legal entity may not take physical possession of the recycled water and may act simply as an Administrator.

Modal Contact Time *: The amount of time elapsed between the time that a tracer, such as salt or dye, is injected into the effluent at the entrance to a chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber.

Nonrestricted Recreational Impoundment *: An impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities.

NTU (Nephelometric Turbidity Unit) *: A measurement of turbidity as determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light scattered by the sample to the intensity of incident light as measured by method 2130 B. in Standard Methods for the Examination of Water and Wastewater, 20th ed.; Eaton, A.D., Clesceri, L.S., and Greenberg, A.E., Eds; American Public Health Association: Washington, DC, 1995; p.2-8.

Oxidized Wastewater *: Wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

Recycled Water Producer: Any entity that produces recycled water.

Recycled Water: Means water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur therefore considered a valuable resource. (Wat. Code, § 13050(n).) Coverage under these Water Reclamation Requirements for Recycled Water Use (General Order) is limited to treated municipal wastewater for non-potable uses.

Recycled Water Supervisor: A person designated, by the Administrator that acts as the coordinator between the supplier and User. The Recycled Water Supervisor shall have authority to ensure recycled water use complies with the General Order, NOA, and the Uniform Statewide Recycling Criteria.

Regional Water Board: All references to a Regional Water Board include the Executive Officer, who may act for the Regional Water Board in carrying out this General Order. See Water Code section 13223.

Restricted access golf course *: A golf course where public access is controlled so that areas irrigated with recycled water cannot be used as if they were part of a park, playground, or school yard and where irrigation is conducted only in areas and during periods when the golf course is not being used by golfers.

Restricted Recreational Impoundment *: An impoundment of recycled water in which recreation is limited to fishing, boating, and other non-body-contact water recreational activities.

Spray Irrigation *: The application of recycled water to plants to maintain vegetation or support growth of vegetation by applying it from sprinklers.

State Water Board: All references to the State Water Board refer to divisions within the State Water Board whose roles in carrying out this General Order are as following:

- Division of Drinking Water reviews and approves (Title 22 Engineering Report and provide recommendations to the Regional Water Boards to address protection of public health. Division of Drinking Water is also processes any Notice of Intent submitted by a potential enrollee needing coverage from multiple Regional Water Boards.
- Division of Water Rights is responsible for approval of wastewater change petitions for water recycling projects that will decrease the amount of water in a stream or other waterway.

Surface Irrigation: Application of recycled water by means other than spraying such that contact between the edible portion of any food crop and recycled water is prevented (i.e., drip or flood irrigation).

Title 22 Engineering Report : Engineering report prepared to describe the manner by which a project or a water recycling program will comply with the Uniform Statewide Recycling Criteria.

Undisinfected Secondary *: Means oxidized wastewater.

ATTACHMENT D: DEFINITION OF TERMS
ORDER WQ 2016-0068-DDW
WATER RECLAMATION REQUIREMENTS
FOR RECYCLED WATER USE

Use Area: An area of recycled water use with defined boundaries. Agricultural use areas may contain one or more facilities (ditch, irrigated fields, pumping stations, etc.); use areas may also consist of an aggregate of small lots (e.g., residential/ industrial developments, roadway median irrigation, etc.).

Use Area Supervisor: A person designated, by the owner or manager of the property upon which recycled water will be applied, to discharge the responsibility of the owner or manager of the property for: (a) installation, operation and maintenance of a system that enables recycled water to be used; (b) for prevention of potential hazards; (c) implementing and complying with conditions of all Water Recycling Use Permits and associated documents; (d) coordination with the cross-connection control program of the supplier of drinking water and the local health/environmental health agency; (e) control of on-site piping to prevent any cross connections with potable water supplies; (f) routine inspection and maintenance of backflow prevention devices. (A Recycled Water Supervisor and Use Area Supervisor may be one in the same in some instances).

User: Users take physical possession of the recycled water from Producer and/or Distributor for an approved beneficial recycled water use consistent with the Uniform Statewide Recycling Criteria. Users may use the recycled water under either a Water Recycling Use Permit from an Administrator or act as an Administrator under this General Order.

Water Recycling Use Permit: A permit issued by the Administrator to the Recycled Water User, which is consistent with the requirements specified in this General Order.