



**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ - CORRECTED**

**GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

**Adoption Date
June 3, 2014**



STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

*THIS COVER PAGE IS PROVIDED FOR CONVENIENCE AND REFERENCE. IT IS NOT PART OF THE
GENERAL ORDER ADOPTED BY THE STATE WATER BOARD*

THIS PAGE INTENTIONALLY LEFT BLANK

STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS..... ACR-1
BACKGROUND INFORMATION..... 1
STATUTORY AND REGULATORY ISSUES..... 5
ANTIDEGRADATION ANALYSIS..... 6
PURPOSE AND APPLICABILITY 11
BASIN PLANS AND BENEFICIAL USES..... 13
CEQA AND PUBLIC NOTICE 13
IT IS HEREBY ORDERED 13
 A. PROHIBITIONS.....13
 B. SPECIFICATIONS.....14
 C. WATER RECYCLING ADMINISTRATION REQUIREMENTS15
 D. GENERAL PROVISIONS17
CERTIFICATION.....18
ATTACHMENT A: NOTICE OF INTENT (NOI) – GENERAL INSTRUCTIONS.....A-1
ATTACHMENT B: MONITORING AND REPORTING PROGRAMB-1
ATTACHMENT C: STANDARD PROVISIONS AND REPORTING REQUIREMENTS . C-1
ATTACHMENT D: DEFINITION OF TERMS..... D-1

THIS TABLE OF CONTENTS PAGE IS PROVIDED FOR CONVENIENCE AND REFERENCE. IT IS NOT PART OF THE GENERAL ORDER ADOPTED BY THE STATE WATER BOARD

STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE

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
Delta	Sacramento-San Joaquin River Delta Estuary
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 Understanding
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
WILD	Wildlife habitat
WDRs	Waste Discharge Requirements

THIS ACRONYMS AND ABBREVIATIONS PAGE IS PROVIDED FOR CONVENIENCE AND REFERENCE. IT IS NOT PART OF THE GENERAL ORDER ADOPTED BY THE STATE WATER BOARD

STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE

BACKGROUND INFORMATION

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

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. "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 General Waste Discharge Requirements (WDRs) for Recycled Water Use (General Order) is limited to treated municipal wastewater for non-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

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.

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

STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE

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.

5. 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.
6. 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 undertake 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.)
7. 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 Recycled Water Policy promotes the use of recycled water to achieve sustainable local water supplies and reduce greenhouse gas emissions.
8. 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.
9. The CDPH has primary statewide responsibility for protecting public health. It has established statewide water recycling criteria in California Code of Regulations, title 22, division 4, chapter 3 (hereafter referred to as title 22). Approved uses of recycled water under title 22 depend on the level of treatment, disinfection, and potential for public contact. CDPH has categorized recycled water based on treatment and disinfection levels. There are four categories of recycled water relevant to this General Order; they are listed here and defined in the indicated title 22 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.)

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

d. Disinfected tertiary recycled water (Cal. Code Regs., tit. 22, § 60301.230.)

An approved title 22 engineering report is required before authorization to use recycled water is granted by the Executive Officer.

10. When used in compliance with the Recycled Water Policy, title 22, 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.
11. This General Order authorizes certain beneficial recycled water uses consistent with title 22. Activities that are not authorized by this order include:
 - a. Activities designed to replenish groundwater resources. Groundwater replenishment activities include surface spreading basins, percolation ponds, or injection through groundwater wells.³
 - 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.
12. 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

3 Injection well is defined in Water Code section 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.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

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.

13. 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 an agronomic rate.
14. 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 have 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.
15. 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.
16. 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.

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.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

STATUTORY AND REGULATORY ISSUES

17. Pursuant to Water Code section 13263(i) the State Water Board or a Regional Water Board may prescribe general WDRs for a category of discharges if the State Water Board or that Regional Water Board finds or determines that all of the following criteria apply to the discharges in that category:
 - a. The discharges are produced by the same or similar operations.
 - b. The discharges involve the same or similar types of waste.
 - c. The discharges require the same or similar treatment standards.
 - d. The discharges are more appropriately regulated under general WDRs than individual WDRs.

Recycled water discharges regulated under this General Order will be consistent with the requirements of title 22. All discharges regulated under this General Order will be from similar operations and will be consistent with the description of recycled water uses described herein. Individual WDRs are not necessary because the recycled water uses and requirements would be similar if individual WDRs were issued, therefore general WDRs are appropriate.

18. 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.
19. 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 are misdemeanors 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 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

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

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 is reasonable and consistent with the best interest of the people of the state in maintaining water quality.

20. The General Order is applicable to recycled water projects where recycled water for non-potable use is used or transported. The 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 WDRs for discharges from wastewater treatment plants, other than the recycled water uses described herein.
21. A 1996 Memorandum of Agreement (MOA) between CDPH and the State Water Board on the use of recycled water establishes basic principles relative to the agencies and the Regional Water Boards. In addition, the MOA allocates primary areas of responsibility and authority between these agencies, and provides for methods and mechanisms necessary to assure ongoing, continuous future coordination of activities relative to the use of recycled water in California. This General Order implements the applicable provisions of the water recycling regulations of title 22 and California Code of Regulations, title 17, division 1, chapter 5 (hereafter referred to as title 17).

ANTIDEGRADATION ANALYSIS

22. [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.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

- 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.
23. 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, 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.
24. This General Order requires BPTC, which is a combination of treatment, storage, and application methods that implement the requirements of title 22 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 and/or disinfection 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, the 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 may 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

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

recycled water on land, where recycled water is further treated in natural soil processes.

- b. Recycled water shall not create nuisance conditions.
 - i. Title 22 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.
 - 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.
- c. Recycled water shall only be used consistent with the title 22 recycled water specifications.
 - i. The applicant must obtain approval of a title 22 engineering report before the Regional Water Board can issue a Notice of Applicability (NOA).
 - ii. Acceptable uses of recycled water, use area signage, and monitoring frequency are specified in title 22.
 - iii. Backflow prevention, cross connection tests, and setback requirements for surface impoundments, wells, etc. are contained in title 22 and title 17, Division 1, Article 2.

25. 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, human 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 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.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

Recycled water available for reuse under this 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 for pathogen removal.

Title 22 imposes limitations on the uses of recycled water, based on the level of treatment and the specific use in order to protect human health. By restricting the use of recycled water to title 22 requirements, this 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 water to agronomic rates provides BPTC.

26. Constituents associated with recycled water that have the potential to degrade groundwater include salinity, nutrients, pathogens (represented by coliform bacteria), and disinfection by-products (DBPs). 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 because of the following characteristics and requirements associated with each of the recycled water constituents of concern. Each of the recycled water constituents 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 will generally reduce concentrations of, and/or loading rates of salinity constituents. As a result, salinity increases are unlikely to impair an existing and/or potential beneficial use of groundwater.
 - 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 an agronomic rate and considering soil, climate, and plant demand

STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE

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 title 22 as a means of reducing pathogenic risks by coupling pathogen inactivation rates with groundwater travel time to a 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. Title 22 contains water recycling criteria, which lists disinfection requirements for specifically listed activities.

- d. Disinfection by-products 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.

- 27. 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 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

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

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].)

28. This General Order authorizes specified uses of recycled water statewide. If the use of recycled water as allowed by this General Order could result in water quality degradation as described below, the Regional Water Board's Executive Officer shall continue coverage under an existing order for the use of recycled water or propose a new site-specific order for consideration by the Regional Water Board. The Executive Officer shall explain the need for a site-specific 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 22 through 27 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 chemical compounds, pathogens, disinfection by-products, or other substances.
 - b. The proposed method of recycled water storage in unlined ponds is not consistent with Findings 22 through 27 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 adopted in a site-specific 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

29. Producers, Distributors, or Users of recycled water covered under existing orders (water recycling requirements, master reclamation permits, general or individual waste discharge requirements, or waivers of waste discharge requirements) for the use of recycled water may elect to either: (i) continue or expand coverage under existing orders or; (ii) apply for coverage under this General Order.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

30. This document serves as a statewide General Order authorizing the use of recycled water by Producers, Distributors, and Users for all title 22 uses except groundwater recharge. The intent of this 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 the order and agree to become the Administrator:
 - a. Producers of recycled water: Producers may be publically or privately owned. A Producer will typically produce recycled water that meets the requirements of title 22. 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 title 22 water 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. 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.
31. To obtain coverage under this General Order, the applicant shall submit an NOI (Attachment A) and application fee to the Regional Water Board of jurisdiction. Fee amounts are specified in California Code of Regulations, title 23, division 3, chapter 9, section 2200. The applicant shall declare responsibility for the administration of the recycled water program authorized pursuant to this General Order. A duly authorized representative for each entity involved in the production and distribution of recycled water shall each sign the NOI form as appropriate. The applicant shall describe a program they will administer to distribute recycled water to Users and ensure that recycled water use complies with the requirements of title 22 and this General Order. Upon authorization by the 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.
32. 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.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

BASIN PLANS AND BENEFICIAL USES

33. 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.
34. Basin Plans establish water quality objectives to protect beneficial uses. The objectives may be narrative, numerical, or both. This General Order requires the Administrator to ensure that Users abide by those objectives in receiving water. Determination of applicable water quality objectives is part of the application process.

CEQA AND PUBLIC NOTICE

35. 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 the CDPH, in order to reduce demand on potable water supplies. 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 requirement to conduct an environmental review is suspended to allow the State Water Board to adopt this General Order as quickly as possible.
36. The State Water Board has notified the Producers, Distributors and interested agencies and persons of its intent to prescribe WDRs, and has provided them the opportunity to attend a public meeting and to submit their written views and recommendations.
37. The State Water Board, in a public meeting, heard and considered all comments pertaining to this matter.

IT IS HEREBY ORDERED that all agencies that file an NOI indicating their intention to be regulated under the provisions of this General Order, and receive authorization from the appropriate Regional Water Board shall comply with the following:

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(l) or nuisance as defined in Water Code section 13050(m).
2. No recycled water shall be applied to irrigation areas during periods when soils are saturated.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

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 or 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.
6. No recycled water shall 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, NPDES permits, or a contingency plan in an approved Water Recycling Use Permit.
7. 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 title 17, section 7604 or as specified by the CDPH.
8. This General Order authorizes certain beneficial recycled water uses consistent with title 22. The following activities are not authorized by this General Order:
 - a. Activities designed to replenish groundwater resources. Groundwater replenishment activities may include surface spreading basins, percolation ponds, or direct injection.
 - b. Disposal of treated wastewater by means of percolation ponds, excessive hydraulic loading of application areas, etc. where the primary purpose of the activity is the disposal of treated wastewater.

B. SPECIFICATIONS

1. Recycled water production, distribution, and use permitted under this General Order shall be in compliance with all of the following requirements:
 - a. All applicable title 17 and title 22 requirements.
 - b. All requirements of this General Order.
 - c. A CDPH approved title 22 Engineering Report (and amendments).
 - d. The NOA issued by the Regional Water Board.
 - e. A Salt and Nutrient Management Plan adopted by the Regional Water Board as a Basin Plan Amendment.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

- f. WDRs or NPDES permits for recycled water production facilities.
 - g. The Water Recycling Use Permit issued by the recycled water Administrator.
 - h. Any applicable water quality related CEQA mitigation measure.
 - i. 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.
2. The Administrator shall discontinue delivery of recycled water during any period in which it has a reason to believe that the limits for that use as specified in title 22 insofar as they relate to the quality of the recycled water, are not being met. The Administrator shall notify the Regional Water Board within 24 hours of determining noncompliance. The delivery of recycled water shall not be resumed until all conditions which caused the violations have been corrected. The Regional Water Board shall be copied on any correspondence concerning non-compliance between the Administrator and User.
 3. Application of recycled water to the use area shall be at an agronomic rate, 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.

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. This General Order becomes effective when the Regional Water Board issues an NOA. The Regional Water Board will coordinate with CDPH to include title 22 engineering report approval requirements, including any CDPH conditions of approval.
3. Under this General Order, the Administrator's program shall be implemented to accomplish compliance with Specification B.1. Upon Regional Water Board approval of the Administrator's program, which shall accompany the NOI, the Administrator may authorize specific water recycling projects, in consultation with CDPH, on a case-by-case basis once the elements of the water recycling program are in place.
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. The Administrator or its agent shall assure 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 CDPH water recycling criteria and title 17 section 7605. Reports of testing and maintenance shall be maintained by the Administrator or its agent.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

6. 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 Users to apply and/or use recycled water in accordance with all applicable CDPH water 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. The Producer shall communicate to Users the nutrient levels in the recycled water.
7. The Administrator or its agent 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.
8. The Administrator shall comply with all applicable items of the attached Standard Provisions and Reporting Requirements (Attachment C) and any amendments thereafter.
9. The Administrator shall require Users to comply with the Administrator's use area conditions. Use area requirements shall be consistent with Specification B.1.
10. If recycled water will be transported by truck for title 22 approved uses such as dust control, the Administrator shall provide notification and control measures for Users consistent with the provisions of an approved title 22 engineering report.
11. 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 Regional Water Board staff, State/County officials, and/or the Administrator.
12. The Administrator shall comply with the attached monitoring and reporting program including any amendments issued by the Regional Water Board. This monitoring program shall be consistent with any applicable Salt and Nutrient Management Plan for the basin/sub-basin. The Administrator is responsible for collecting reports from Users. 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 Regional Water Board. The Administrator, at its discretion, may assume the User's responsibility for on-site observation reports and use data.
13. The Administrator or its agent 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.
14. The Administrator shall require that personnel receive training to assure proper operation of recycling facilities, worker protection, and compliance with this

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

General Order. In accordance with title 17, section 7586, the Administrator shall require Recycled Water Supervisor(s) to be familiar with the Administrator permit conditions.

15. The Administrator or its agent 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 title 22.

D. GENERAL PROVISIONS

1. The Administrator shall document compliance with all conditions of this General Order and of water recycling criteria specified in title 22 and title 17.
2. If directed by the Regional Water Board pursuant to Water Code section 13267, an Administrator shall prepare and submit a Salt and Nutrient Management Plan, acceptable to the Regional Water Board, to ensure that the overall impact of permitted water recycling projects does not degrade groundwater resources. Unless otherwise directed by the Regional Water Board, 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. Regional Water Board staff will conduct inspections/audits of water recycling projects. The Administrator and Users shall permit the Regional Water Board or its authorized representatives, in accordance with Water Code section 13267(c):
 - 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 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 regulated to acceptable levels by General Order modification or termination.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

5. The 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.

CERTIFICATION

The undersigned, Clerk to the 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 3, 2014.

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

Attachments:

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

STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE

ATTACHMENT A: NOTICE OF INTENT (NOI) – GENERAL INSTRUCTIONS

Who May Apply

This order is intended to serve as a statewide General Order for recycled water projects. It may be used to replace individual waste discharge requirements/water recycling requirements/master reclamation permits and may be issued to any of the following:

- a. Producers of recycled water. Producers may be publically or privately owned. A Producer will typically produce recycled water that meets the requirements of title 22. 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 title 22 water 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. 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 California Department of Public Health (CDPH) staff to determine the application information needs.

Where to Apply

An applicant should submit an NOI to their applicable Regional Water Board and CDPH, Drinking Water Field Operations Branch. **The NOI cannot be considered complete until CDPH provides a title 22 Engineering Report approval letter.**

When to Apply

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

STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE

What to File

The NOI shall include a Water Recycling Program technical report, containing the following information (at a minimum):

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 shall be included in the submittal.**

SECTION II – RECYCLED WATER APPLICATION

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

- a. Administrator owned/controlled uses (e.g. irrigation type/acreage/locations)
- b. 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. Operation and management plan specifying agronomic rate(s) and nutrient application for the use area(s) and a set of reasonably practicable measures to ensure compliance with this General Order. This 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, waivers of WDRs, or conditional prohibitions regulating agricultural discharges from irrigated lands.
 4. Descriptions/maps of use area(s).

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

SECTION III - DESCRIPTION OF WATER RECYCLING USE PERMIT 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.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

ATTACHMENT B: MONITORING AND REPORTING PROGRAM

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. 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 2014-0090-DWQ. 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.

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.

**STATE WATER RESOURCES CONTROL BOARD
 ORDER WQ 2014-0090-DWQ
 GENERAL WASTE DISCHARGE REQUIREMENTS
 FOR RECYCLED WATER USE**

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 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 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

mgd denotes million gallons per day.

DISINFECTION SYSTEM MONITORING

If disinfection is performed, samples shall be collected from immediately downstream of the disinfection system. Depending upon the level of disinfection and recycled water disposal, monitoring requirements vary. Disinfection monitoring shall be customized to the site-specific conditions from the following:

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.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

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

^(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.

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 the 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 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; the Administrator retains responsibility to ensure the data is collected, as well as prepare and submit the annual report.

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:

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

<u>Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency^(a)</u>	<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 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, consult with the California Department of Public Health (CDPH) to determine additional monitoring requirements.

If dual plumbed recycled water systems are proposed, consult with CDPH for additional reporting, design, and operation requirements. The potential for cross connections and backflow prevention devices shall be monitored as listed below, or more frequently if specified by CDPH.

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

^(a) Testing shall be performed at least every four years, or more frequently at the discretion of the CDPH.

^(b) Cross connection testing shall be reported pursuant to title 22 section 60314. The report shall be submitted to CDPH 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 title 17, section 7605.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

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 the 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 Internet web site or 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.
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 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.
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:

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

“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

A. GENERAL PROVISIONS

1. Duty to Comply

- a. An Administrator must comply with all of the conditions of this General Order. Any General Order non-compliance constitutes a violation of the Porter-Cologne Water Quality Control Act 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 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 shall be maintained at the Administrator facilities and be available at all times to operating personnel.

STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE

B. GENERAL REPORTING REQUIREMENTS

1. Signatory Requirements

- a. All reports required by the 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.

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 title 22 requirements shall be submitted in the annual self-monitoring reports.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

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 Regional Water Board.
2. Any violation of the 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 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 the General Order.

ATTACHMENT D: DEFINITION OF TERMS

Administrator: An Administrator is an entity (producer, distributor, 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 title 22. An Administrator is responsible for coordinating, collecting data, and reporting the monitoring reports to the Regional Water Board.

Agronomic Rate: 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:
 - (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

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

(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 title 22.

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 title 22 water 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

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

- (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.

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 General Waste Discharge Requirements (WDRs) 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 title 22 requirements.

**STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2014-0090-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR RECYCLED WATER USE**

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 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.

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).

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).

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.