

*CITY OF LIVERMORE
WATER REUSE PROGRAM*

*Guidelines for
the Use
of Recycled Water*

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Prepared by EOA, Inc.*

TABLE OF CONTENTS

INTRODUCTION.....	1
FREQUENTLY ASKED QUESTIONS ABOUT RECYCLED WATER.....	1
SERVICE REQUIREMENTS	3
SERVICE AREAS.....	3
CONDITIONS OF SERVICE	3
PERMIT TO USE RECYCLED WATER.....	3
PROTECTION OF WATER RESOURCES	4
USER SUPERVISOR.....	6
TRAINING OF PERSONNEL.....	7
OPERATION AND MAINTENANCE REQUIREMENTS	7
EMERGENCY PROCEDURES.....	9
TECHNICAL REQUIREMENTS & FACILITIES DESIGN.....	10
RECYCLED WATER SIGNAGE.....	10
COLOR CODING	10
SEPARATION OF POTABLE AND RECYCLED WATER SYSTEMS.....	11
HOSE BIBS	12
CONSTRUCTION IN THE PUBLIC RIGHT-OF-WAY	12
CONSTRUCTION ON CUSTOMER’S PROPERTY	12
CONSTRUCTION WATER.....	12

LIST OF TABLES

Table 1: Recycled Water Uses Allowed in California

APPENDICES

Appendix A

- Application for a Permit to Use Recycled Water

Appendix B

- Requirements for Engineering Reports for Dual-Plumbed Systems

Appendix C

- Examples of Use Area Sign & Installation Requirements
- Examples of Suitable Point of Access Signs
- Example of Taped Recycled Water Pipeline

Appendix D

- Alternative Separation Criteria for Recycled Water Piping

Appendix E

- Water Reuse Permit for Construction Water
- Water Reuse Release Form

Introduction

FREQUENTLY ASKED QUESTIONS ABOUT RECYCLED WATER

What is recycled water?

The California Water Code defines recycled water as “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.” The use of recycled water reduces the amount of fresh water required for non-potable uses, ensuring that the best and purest sources of water will be reserved for the highest use – public drinking water.

What are the benefits of using recycled water?

The use of recycled water in lieu of potable water adds greatly to our ability to manage our existing and future water resources. Using recycled water for approved non-potable purposes, such as irrigation, preserves valuable potable water resources for other future uses. In addition, recycled water is largely "drought resistant." During a drought, when potable water for non-essential uses may be restricted, recycled water use is usually unaffected.

How is the recycled water provided in the City of Livermore produced?

Recycled water distributed within the City of Livermore is disinfected tertiary treated water whose origin is domestic wastewater. It is treated to comply with Title 22, Division 4 of the California Code of Regulations. The recycled water is colorless and odorless, and is suitable for many uses including human contact, but not human consumption.

Wastewater is collected and conveyed via the sewer system to the Livermore Water Reclamation Plant where it undergoes primary, secondary, and tertiary treatment. During primary treatment, dense materials, sand, grit, stones, etc. are removed. Secondary treatment uses a biological process where bacteria reduces complex organic matter to less complex matter and metabolizes it. The bacteria are removed at a later point in the treatment process. Up to 90 percent of the remaining solids and organic material are removed during secondary treatment. Tertiary treatment, the final stage, uses chemical coagulation and filtration to remove any remaining solids. Disinfection destroys bacteria, viruses and other pathogens. The result is a water product that meets the very stringent regulatory standards for "disinfected tertiary" recycled water.

What regulations govern the use of recycled water?

Legislation governing production, distribution, and use of recycled water is contained in California's Health and Safety Code and Water Code. This legislation is implemented through California Code of Regulations (CCR) Titles 17 and 22. Title 17 establishes backflow protection for potable water supplies, and Title 22 sets the requirements for recycled water treatment, quality, and allowable uses. The regulations ensure consistent, reliable recycled water quality while protecting public health.

Title 22, written and administered by the Department of Health Services (DHS), is one of the most stringent recycled water regulations in the world and is being used as a model for other states. There is presently no federal legislation that controls recycled water uses. The State Water Resources Control Board regulates the production, conveyance and use of recycled water through its Regional Water Quality Control Boards (RWQCBs). The RWQCBs issue permits, referred to as “Water Reuse Orders,” to recycled water producers. DHS provides input to the RWQCBs about requirements for specific recycled water projects. Individual customers are authorized to use recycled water through the producer's water reuse order.

Livermore Municipal Water (LMW), of the City’s Water Resources Division, administers the City of Livermore Water Reuse Program. LMW manages the distribution and use of recycled water by issuing a site-specific *Permit to Use Recycled Water* to each recycled water customer. The permitting process is designed to ensure that recycled water use conforms to DHS and RWQCB requirements.

Is recycled water safe?

It is very safe for the uses for which it is intended. Recycled water can be used for landscape irrigation, fire protection (indoors & outdoors), construction water, and numerous other applications. To ensure a consistent level of safety, recycled water is continually monitored and tested for compliance with regulations.

While “disinfected tertiary” recycled water is approved for human contact, it is not intended for human consumption.

DHS is responsible for the establishment of recycled water regulations contained in Title 22, Division 4 of the California Code of Regulations. The RWQCBs issue water reuse orders to individual recycled water producers in conformance with DHS regulations. In the City of Livermore’s case, the San Francisco Bay Regional Water Quality Control Board provides regulatory oversight of its Water Reuse Program. Water reuse orders contain provisions to ensure that the water quality standards, and treatment and use reliability and redundancy criteria contained in Title 22 are followed. Provisions also require compliance with requirements for preventing backflow of recycled water into the public water system, and for avoiding cross-connection between the recycled and potable water systems.

What are suitable uses of recycled water?

“Table 1: Recycled Water Uses Allowed in California” illustrates the wide variety of reuse applications and the level of treatment required. Title 22 sets bacteriological water quality standards on the basis of the expected degree of public contact with recycled water.

The level of treatment provided by the City of Livermore’s Water Reclamation Plant corresponds to “disinfected tertiary recycled water.” While this is the highest level of treatment listed on Table 1, and has the greatest number of allowed uses, disinfected tertiary recycled water is not suitable for drinking or for use in food preparation.

Service Requirements

SERVICE AREAS

Recycled water may be provided to all customers within the boundaries of approved service areas for recycled water. **The use of recycled water will be allowed only in accordance with federal, state, and local regulations, and the conditions of recycled water permits.**

CONDITIONS OF SERVICE

- Service to recycled water customers may be terminated or interrupted due to the following:
 - ⇒ The quality of the recycled water does not comply with regulatory requirements.
 - ⇒ The customer's use of the recycled water does not conform to all applicable regulations.
- If the pressure of the recycled water system is higher than the customer needs, it is the responsibility of the customer to provide a pressure-reducing valve downstream of the service meter.

PERMIT TO USE RECYCLED WATER

Prospective recycled water customers must submit an *Application for a Permit to Use Recycled Water* to Livermore Municipal Water (LMW), which administers the City of Livermore Water Reuse Program (Program). An application form is in Appendix A.

The permit application shall include:

- Site address, assessor's block and lot numbers, or property metes and bounds
- Applicant's name and address, owner's name and address (if different), applicant's relationship to the subject property as legal owner, tenant, or lessee
- **Designation of user's recycled water supervisor, the User Supervisor, including address and 24-hr contact number(s)**
- Description of planned recycled water use on the property
- Estimated annual flow and peak flow at point of connection
- If applicable, total irrigated area, expressed in appropriate units
- Other items that could be of concern when using recycled water
- **Signature of the designated User Supervisor, certifying that he or she will comply with permit conditions**
- Signature of owner or duly authorized representative, certifying that information contained in the permit application is true and correct
- Drawing(s) of the property, which show:
 - ⇒ All buildings on the site
 - ⇒ Recycled water use areas

- ⇒ Location, size, and materials of construction for potable and recycled water piping
- ⇒ Location of all service connections, meters, and backflow devices relative to buildings, property lines, or intersections.
- ⇒ Location of outdoor drinking fountains, hose bibs, quick couplers and other points of ready access to recycled or potable water systems
- ⇒ Location of outdoor eating areas
- ⇒ Location of recycled water signage (refer to Recycled Water Signage section of these Guidelines for recommended locations and requirements)
- ⇒ Locations of irrigation controller(s) and irrigation schedule, if applicable
- ⇒ Direction of drainage from irrigated areas, if applicable
- ⇒ Locations of wells, ponds, storage tanks or other impoundments

Generally, the site's construction drawings can be used to meet the above drawing(s) requirements, although it may be necessary to annotate the drawings to clearly show all information listed. For retrofit sites, if construction drawings are not available, a site drawing with the above information shall be prepared.

For sites where recycled water is to be used inside a building, a more formal Engineering Report must be filed. Requirements for preparing an Engineering Report are included in Appendix B.

The *Application for a Permit to Use Recycled Water* shall be filed concurrently with the application for a building permit. Upon receipt of the permit application, LMW will conduct a plan check to verify that all design conditions to use recycled water are met. If not, LMW will require resubmittal of the missing information and/or drawings. For retrofit sites, LMW will conduct a site inspection, and will notify the customer of any repairs or modifications required.

Upon completion of construction or site modifications, LMW will conduct a final inspection to verify that all design requirements have been met. A cross-connection test will be conducted to verify that there are no interconnections between the potable and recycled water systems.

All final conditions shall be recorded on the site drawings. Final approval for service will be indicated by LMW issuing the customer a *Permit to Use Recycled Water*. The Permit will include the customer's signed permit application, along with a listing of any site-specific requirements. The permit shall be the binding agreement between LMW and the user.

PROTECTION OF WATER RESOURCES

Potable Water System Protection

On premises using both recycled water and potable water, the potable water supply must be protected against any accidental cross connections by the use of a reduced pressure backflow prevention assembly (RP). All backflow devices shall be on the current Department of Health Services list of "Approved Backflow Prevention Assemblies," and shall be tested and

certified prior to final approval. Testing requirements for backflow devices will be specified by LMW and may be quarterly, semi-annual or annual, depending on the degree of hazard at a particular site.

Some recycled water customer sites may have separate dedicated fire protection systems that use potable water. Those systems shall also be protected with RP assemblies at their point of connection. Those assemblies shall also be inspected and tested as specified by LMW.

Groundwater Protection

The irrigation or impoundment of recycled water is prohibited within 50 feet of any potable water reservoir or well. Irrigation or impoundment of recycled water within 100 feet of any non-potable well shall require the approval of the appropriate health agency.

Recycled Water System Protection

To ensure that customers do not compromise the City's recycled water system, LMW requires "Approved Backflow Devices" on each customer's recycled water system. Backflow devices shall be properly inspected, maintained, and tested as indicated above. Backflow devices on the customer's recycled water system shall be marked and color-coded as noted elsewhere in these Guidelines.

Backflow device testing equipment used in the recycled water system shall not be used in the potable water system.

System Cross-Connection Testing

At sites where both recycled water and potable water systems are present, a cross connection test will be performed before final approval is given to energize the two systems. This test is to ensure that there is absolute separation between the two systems. During the test, one system (e.g. the potable) is pressurized, while the other (e.g. the recycled) is depressurized. All outlets are then checked for the presence or absence of flow. The test is then reversed, (e.g. recycled system is pressurized, and the potable system is depressurized), and all outlets are again checked for the presence or absence of flow.

The cross-connection test is coordinated by LMW staff and will be performed in the presence of the User Supervisor. Representatives from the Department of Health Services may be present as well. A written report will document the test results. Cross connection tests will be conducted periodically, at a minimum frequency of once every four years. LMW may, at its discretion, specify more frequent testing for large or complex sites, following modifications to the site's potable or recycled water systems, or when there is any concern regarding a possible cross connection at the site.

Procedures for conducting cross connection tests, and a form for documenting the test results are contained in the Water Reuse Program *Administrative Procedures for Program Staff*.

USER SUPERVISOR

A User Supervisor must be designated by the owner and approved by LMW for every site where recycled water is used. LMW's approval will be based on the individual's familiarity with the recycled water system, authority, and reliability. LMW will provide training for the User Supervisor as described below. Although LMW retains ultimate responsibility for use of recycled water at all sites, the User Supervisor is the primary means for ensuring safe use of recycled water at a given site. **The following are the responsibilities of the User Supervisor:**

- **Control over on-site uses of recycled water:** The User Supervisor is required to be familiar with the entire on-site recycled water system, and with all applicable conditions governing recycled water use at the site. The User Supervisor shall ensure that recycled water use complies with those conditions. The User Supervisor shall also be responsible for proper operation and maintenance of the recycled water system and of all backflow prevention devices.
- **Training:** LMW will provide training to the User Supervisor. Training will cover the Water Reuse Program's *Guidelines for the Use of Recycled Water*. LMW will participate or assist in any additional training, as necessary, for the customer's employees. During its annual inspection of the facility, LMW will discuss the customer's method of informing employees about recycled water use on site.
- **Contact Information and Notification of Changes:** The User Supervisor shall provide LMW with an address and phone number(s) where he or she can be contacted at all times. The User Supervisor shall notify LMW of any change in the individual designated to be User Supervisor, any change in contact information, and any planned modifications or planned additions to the recycled water system. Approval from the LMW shall be obtained before any modifications are made.
- **Failures and Violations:** The User Supervisor is responsible for notifying LMW of any failure of the on-site recycled water system, any cross-connection between the recycled and potable water systems, or any inappropriate uses that occurs. For any condition which has the potential to endanger public health, such as a cross connection, the User Supervisor shall notify the Water Resources Division immediately at 925-960-8100 (on weekends and from 5 p.m. to 8 a.m., call 925-960-8160).
- **Monitoring:** The User Supervisor shall be responsible for any monitoring specified in the customer's *Permit to Use Recycled Water*, and may participate in monitoring the use of recycled water on-site.

TRAINING OF PERSONNEL

LMW staff will provide training for the User Supervisor. The User Supervisor is responsible for ensuring that on-site operations personnel (i.e. those who use or maintain the recycled water system) are familiar with the proper use of recycled water. The User Supervisor shall review the following requirements with operating personnel prior to their working with recycled water:

- There is **never** to be a direct connection between the recycled water system and the potable water system.
- Recycled water, though highly treated, is non-potable; recycled water is **never** to be used for human consumption.
- Working with recycled water is safe if both common sense and the appropriate regulations are followed. **Personnel shall exercise good hygiene when working around recycled water, e.g., wash hands before eating or drinking.**
- The operation and maintenance of the recycled water system must conform to requirements described in these Guidelines.

OPERATION AND MAINTENANCE REQUIREMENTS

Customer use of recycled water shall at all times conform to the following prohibitions and requirements:

- **Prevention of Cross-Connections:** A cross-connection is defined as an unprotected actual or potential connection between a potable water system used to supply water for drinking purposes, and the recycled water system (or any other unapproved water source or substance). Title 17 and Title 22 of the California Code of Regulations strictly prohibit cross-connections between the recycled water system and the potable water system. **There shall never be a physical connection between the recycled water system and the potable water system anywhere on the customer's premises.**
- **Unapproved Uses:** Use of recycled water for any purpose other than those explicitly allowed under the customer's *Permit to Use Recycled* water is strictly prohibited.
- **Equipment Maintenance:** All equipment shall be maintained in good working condition. Broken or faulty irrigation components shall be **promptly** repaired. All signs, equipment identification devices, and color-coding shall be maintained.
- **Runoff:** All irrigation systems shall be designed, constructed, and operated to minimize the runoff of recycled water outside of the approved use area.
- **Ponding:** All irrigation systems shall be designed, constructed, and operated to

minimize the ponding of recycled water both inside and outside of the approved use area.

- **Windblown Spray:** All irrigation systems shall be designed, constructed, and operated to minimize, to the fullest extent, the possibility of recycled water spray being carried outside the approved use area.
- **Overspray:** Recycled water shall not be sprayed on people, food handling facilities or drinking fountains.
- **Hours of Operations:** The operation of each customer's recycled water system, if used for irrigation, shall occur during the hours of least use of the area by the public. This will be between the hours of 10 p.m. and 6 a.m., unless otherwise requested by the customer. Requests for operation during other times will be determined on a case-by-case basis, with consideration given to allowing a drying-out period before the public uses the area. The recycled water shall not be used for lengths of time longer than needed to satisfy the watering requirements of the landscaping.

MONITORING AND INSPECTIONS

LMW will inspect each customer's recycled water system annually, or on a more frequent basis if warranted by the size and complexity of the site or other considerations. The inspections will include, at a minimum, a visual inspection of all backflow prevention assemblies, exposed piping, valves, pressure reducing valves, sprinklers, controllers, signs, labels, tags, and all points of connection. The inspection will also check for proper use, e.g., minimization of runoff, overspray, ponding, etc. The User Supervisor's records will be inspected to review the maintenance and education conducted since the last inspection. **The LMW inspector will complete an inspection form, and transmit any deficiencies observed to the User Supervisor for correction.**

In some cases, LMW may require customers to conduct self-monitoring of recycled water use sites. If so, the customer's *Permit to Use Recycled Water* will designate the monitoring frequency and reporting requirements, and will include a form for the customer's use.

NOTIFICATION OF REPAIRS OR MODIFICATIONS

Customers shall notify LMW in writing of any significant proposed repairs or modifications to the on-site recycled water system. Notification shall include a sketch or drawing clearly delineating all changes. Approval shall be obtained from the LMW **prior to implementation** of the proposed repairs or modification. Customers shall record all changes on the site's record drawings and submit a copy to the LMW.

VIOLATIONS

Violations may result in suspension or revocation of Use Permit

Violations of the customer's *Permit to Use Recycled Water* include, but are not limited to, the following:

- Failure to maintain equipment and identification devices (signs, coatings, etc) in good working condition
- Use of recycled water which results in excessive run-off, overspray, or ponding
- Failure to report changes in the recycled water system to LMW, including a change in the site's User Supervisor
- Use of recycled water for purposes other than specified in customer's permit
- Use of hose bibs on the recycled water system
- Creating an interconnection between the potable and recycled water systems

EMERGENCY PROCEDURES

In the event of an emergency involving the recycled water system, the user shall immediately notify LMW by calling the Water Resources Division at 925-960-8100 Monday through Friday, 8 a.m. to 5 p.m. (call 925-960-8160 on weekends or during other hours).

Emergencies include, but are not limited to, line breaks in the distribution system and cross-connections between the user's potable and recycled water systems.

In the event of a cross-connection on the user's site, the user shall immediately stop using potable water at the site, and shall isolate the on-site potable water system from the public supply at the point of connection. Before potable water service can be resumed, the cross-connection must be removed, and the site inspected and approved by LMW. If it is determined that recycled water has entered the user's potable water system, the system must also be disinfected and tested before service can be resumed. LMW may, at its discretion, perform such disinfection and testing and charge the user, or may provide instructions to a qualified contractor retained by the user.

In the case of a major earthquake, the User Supervisor must inspect the recycled water and potable water systems. If either of the systems is damaged, both the potable water system and the recycled water system shall be shut off at their respective points of connection. The User Supervisor shall then notify LMW and obtain further instructions.

A customer may make emergency modifications or repairs to their system without prior approval of LMW when this action will prevent contamination, damage to the system, or a public health hazard. The User Supervisor shall notify LMW of the modifications as soon as possible in order to set up an appointment for a follow-up inspection.

Technical Requirements & Facilities Design

RECYCLED WATER SIGNAGE

 Signs may be purchased from Livermore Municipal Water

Posting of Use Areas

Recycled water use areas shall have one or more signs visibly posted to inform the public that recycled water is used at that location. Signs shall measure no less than 8" x 8" with white type against a purple background. Examples of use area sign and installation requirements are in Appendix C.

Signs at Points of Access

In addition to use area signs, individual fixtures and points of access to the recycled water system, such as fire hydrants, quick connects, blow-off points, inspection ports, etc., shall have signs with **"Recycled Water - Do Not Drink"** superimposed over the universal **"Do Not Drink"** symbol. Examples of suitable point-of-access signs are in Appendix C.

COLOR CODING

Recycled water facilities shall be color-coded as follows:

Fire Hydrants

All recycled water fire hydrants shall be colored purple. Each such fire hydrant shall also be posted as required in the Recycled Water Signage section above.

Pipe Material

All pipe material used for the distribution of recycled water shall be purple. For PVC pipe, this requirement is met through the use of commercially available purple pipe. For other types of piping, and for valves and other appurtenances, this requirement shall be met using purple paint or purple adhesive tape wrap. The tape wrap must be labeled with the words **"Recycled Water-Do Not Drink."**

Valve lids

All recycled water valve lids will be colored purple and marked **"Recycled Water"** or **"Recycled"** in the center of the lid. Valve lids for fire hydrants using recycled water shall be purple.

Water meters

All recycled water meters shall be painted purple.

Marking tape

All marking tape for recycled water facilities shall be purple, with black lettering stating **"Caution: Recycled Water - Do Not Drink."**

Adhesive tape

All adhesive tape for wrapping recycled water piping shall be purple, with black lettering stating “**Caution: Recycled Water - Do Not Drink.**”

Irrigation Controllers

Irrigation controllers shall be posted with a purple recycled water sticker. The message on the sticker shall be printed in both English and Spanish. An example of an irrigation controller sticker is included in Appendix C.

Other components

Other components of the recycled water system shall be identified by purple paint, adhesive wrap, or other means of identification approved by LMW.

SEPARATION OF POTABLE AND RECYCLED WATER SYSTEMS

In accordance with DHS guidelines, the separation of potable and recycled water piping **shall be maintained to the greatest extent possible** in both new construction and retrofit applications. The basic separation standards are as follows:

Within the Public Right-of-Way

- Parallel Construction: The horizontal distance between pressurized potable water and recycled water lines shall be at least 10 feet. Potable and recycled water lines shall not be installed in a common trench.
- Perpendicular Construction (crossings): Potable water lines shall be at least one foot above recycled water lines where these lines cross

Inside Buildings

- Parallel Construction: There are no separation requirements. Recycled water lines within five feet of a potable water line shall be wrapped with purple adhesive tape as described in the Color Coding section above. An example of the taping is in Appendix C.
- Perpendicular Construction (crossings): There are no separation requirements. Recycled water lines that cross potable water lines must be wrapped with purple adhesive tape within five feet of the potable line.

Where it is not possible to meet the basic separation standards, alternative construction criteria may be applied. The alternative separation criteria for construction of mains are illustrated in Appendix D. Exceptions to the alternative criteria will be evaluated by LMW on a case-by-case basis. Exceptions will be allowed only when it has been demonstrated that neither the basic nor the alternative criteria can be met.

HOSE BIBS

Hose bibs on the recycled water system are prohibited. Quick couplers on the recycled water system shall be different from those used on the potable water system. Quick couplers on the recycled water system shall be labeled “**Recycled Water - Do Not Drink**” as described in the Recycled Water Signage section of these Guidelines.

CONSTRUCTION IN THE PUBLIC RIGHT-OF-WAY

Construction of recycled water facilities in the public right-of-way shall adhere to the City of Livermore Standard Details & Specifications, as described below. (Contact the City’s Engineering Division to obtain a copy of the Standard Details & Specifications.)

Pipe Material, 1/2” through 3”, used for the distribution of recycled water shall be PVC schedule 40 or schedule 80. All material shall be **Alertline purple pipe, PWPurple Plus**, or approved equal.

Pipe Material, 4” through 24”, used for the distribution of recycled water shall be PVC C900 (Class 150 DR 18 or Class 200 DR 14) or C905 PR 165 DR25. All pipe material shall be purple. All material shall be **PWPurple Plus** or approved equal.

Water Valves shall have Christy G-5 or approved equal boxes and lids. The lids shall be colored purple and marked “**Recycled Water**” per LMW Standard Specifications.

CONSTRUCTION ON CUSTOMER’S PROPERTY

Construction of recycled water facilities on customer’s property shall conform to the requirements for signage, color-coding, separation, and identification as delineated in these Guidelines. All new recycled water piping shall be purple.

CONSTRUCTION WATER

Recycled water shall be used, if available, for construction purposes (soil compaction, dust control, roadway landscaping, etc). A different type of permit from that issued for permanent recycled water uses is required. The permit form for construction water is in Appendix E.

If authorized by permit, trucks may be filled with recycled water from designated hydrants. The filling operation shall be monitored at all times. Recycled water shall be used only for the purposes designated in the permit, and water shall be transported in a manner that prevents spillage. Drivers shall be appraised of procedures for safe handling of recycled water as described in the “Training of Personnel” provisions of these Guidelines. Trucks shall have signs clearly identifying the water as either recycled or non-potable, and stating, “**Do Not Drink**”.

Table 1: Recycled Water Uses Allowed in California¹

Irrigation	Disinfected Tertiary	Disinfected Secondary-2.2	Disinfected Secondary-23	Undisinfected Secondary
Food crops where recycled water contacts edible portion of crop, including all root crops	Allowed	Not allowed	Not allowed	Not allowed
Parks and playgrounds	Allowed	Not allowed	Not allowed	Not allowed
School yards	Allowed	Not allowed	Not allowed	Not allowed
Residential landscaping	Allowed	Not allowed	Not allowed	Not allowed
Unrestricted access golf courses	Allowed	Not allowed	Not allowed	Not allowed
Any other irrigation uses not prohibited by other provisions of Calif. Code of Regulations	Allowed	Not allowed	Not allowed	Not allowed
Food crops where edible portion is produced above ground and not contacted by recycled water	Allowed	Allowed	Not allowed	Not allowed
Cemeteries	Allowed	Allowed	Allowed	Not allowed
Freeway landscaping	Allowed	Allowed	Allowed	Not allowed
Restricted access golf courses	Allowed	Allowed	Allowed	Not allowed
Ornamental nursery stock and sod farms	Allowed	Allowed	Allowed	Not allowed
Pasture for milk animals	Allowed	Allowed	Allowed	Not allowed
Non-edible vegetation w/ access control to prevent use as a park, playground or school yard	Allowed	Allowed	Allowed	Not allowed
Orchards w/ no contact between edible portion & recycled water	Allowed	Allowed	Allowed	Allowed
Vineyards w/ no contact between edible portion and recycled water	Allowed	Allowed	Allowed	Allowed
Nonfood-bearing trees incl. Christmas trees not irrigated <14 days before harvest	Allowed	Allowed	Allowed	Allowed
Fodder crops (e.g. alfalfa) and fiber crops (e.g. cotton)	Allowed	Allowed	Allowed	Allowed
Seed crops not eaten by humans	Allowed	Allowed	Allowed	Allowed
Food crops that undergo commercial pathogen-destroying processing before consumption by humans	Allowed	Allowed	Allowed	Allowed
Ornamental nursery stock, sod farms not irrigated <14 days before harvest	Allowed	Allowed	Allowed	Allowed

Table 1: Recycled Water Uses Allowed in California¹
(Continued-2)

Impoundments	Disinfected Tertiary	Disinfected Secondary – 2.2	Disinfected Secondary – 23	Undisinfected Secondary
Non-restricted recreational impoundments, with supplemental monitoring for pathogenic organisms	Allowed²	Not allowed	Not allowed	Not allowed
Restricted recreational impoundments and publicly accessible fish hatcheries	Allowed	Allowed	Not allowed	Not allowed
Landscape impoundments without decorative fountains	Allowed	Allowed	Allowed	Not allowed
Cooling or Air Conditioning				
Cooling or Air Conditioning	Disinfected Tertiary	Disinfected Secondary – 2.2	Disinfected Secondary – 23	Undisinfected Secondary
Industrial or commercial cooling or air conditioning involving cooling tower, evaporative condenser, or spraying that creates a mist	Allowed³	Not allowed	Not allowed	Not allowed
Industrial or commercial cooling or air conditioning not involving a cooling tower, evaporative condenser, or spraying that creates a mist	Allowed	Allowed	Allowed	Not allowed
Other Uses				
Other Uses	Disinfected Tertiary	Disinfected Secondary – 2.2	Disinfected Secondary – 23	Undisinfected Secondary
Groundwater recharge	Allowed under special case-by-case permits by RWQCB⁴			
Flushing toilets and urinals	Allowed	Not allowed	Not allowed	Not allowed
Priming drain traps	Allowed	Not allowed	Not allowed	Not allowed
Industrial process water that may contact workers	Allowed	Not allowed	Not allowed	Not allowed
Structural fire fighting	Allowed	Not allowed	Not allowed	Not allowed
Decorative fountains	Allowed	Not allowed	Not allowed	Not allowed
Commercial laundries	Allowed	Not allowed	Not allowed	Not allowed
Consolidation of backfill material around potable water pipelines	Allowed	Not allowed	Not allowed	Not allowed
Artificial snow making for commercial outdoor uses	Allowed	Not allowed	Not allowed	Not allowed

Table 1: Recycled Water Uses Allowed in California¹
(Continued-3)

Other Uses (continued)	Disinfected Tertiary	Disinfected Secondary – 2.2	Disinfected Secondary – 23	Undisinfected Secondary
Commercial car washes not done by hand & excluding the general public from washing process	Allowed	Not allowed	Not allowed	Not allowed
Industrial boiler feed	Allowed	Allowed	Allowed	Not allowed
Nonstructural fire fighting	Allowed	Allowed	Allowed	Not allowed
Backfill consolidation around nonpotable piping	Allowed	Allowed	Allowed	Not allowed
Soil compaction	Allowed	Allowed	Allowed	Not allowed
Mixing concrete	Allowed	Allowed	Allowed	Not allowed
Dust control on roads and streets	Allowed	Allowed	Allowed	Not allowed
Cleaning roads, sidewalks and outdoor work areas	Allowed	Allowed	Allowed	Not allowed
Flushing sanitary sewers	Allowed	Allowed	Allowed	Allowed

¹ Table prepared by Water Reuse Association as a guide. Refer to the full text of the latest version of Title-22.

² With "conventional tertiary treatment." Additional monitoring for two years or more is necessary with direct filtration.

³ Drift Eliminators and/or biocides are required if public or employees can be exposed to mist.

⁴ Refer to Groundwater Recharge Guidelines, California Department of Health Services.