



Recycled Water Program

Guidelines for the Use of Recycled Water

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PURPOSE

The purpose of this Manual is to provide the recycled water customer and Recycled Water On-site Supervisor with a resource for the day-to-day operation and control of that system, in order to protect the health and welfare of the personnel involved with its use as well as the general public, and to protect the quality of local water resources. Recycled water is an important resource for the State of California, and its use for nonpotable applications is, in many cases, mandated by State law.

This Manual provides necessary information to meet existing regulations for the operation of the customer's recycled water system. Every effort has been made to ensure that this Manual is in compliance with, and is not intended to supersede existing codes, laws, statutes and regulations of the State of California, Regulatory Agencies and local governing bodies, concerning the currently approved use of recycled water. This Manual is also not intended to supersede the American Water Works Association (AWWA) California-Nevada Section's Guidelines for Distribution of Nonpotable Water or Guidelines for the On-site Retrofit of Facilities Using Disinfected Tertiary Recycled Water.

Since legal and regulatory requirements can change without the express approval or knowledge of the Coachella Valley Water District (CVWD), CVWD assumes no liability for errors in this Manual or changes made necessary by changes in applicable laws or regulations. It's the responsibility of the Customer to check with CVWD before initiating any operational or physical changes to the use site's system.

This Manual is organized in the following manner:

- **The Customer's Summary** provides a brief commentary on major topics and indicates a page number to find additional information.
- **General Provisions** covers the basic administrative requirements including authorities, responsibilities and liabilities.
- **Design and Construction** covers the considerations needed when an on-site recycled water system is first installed or modified.
- **Operation and Maintenance** covers the basic conditions for service contained in the State of California's "Water Recycling Criteria".
- **Marking and Equipment** gives the basic requirements for marking the water systems and signing the use area.
- **Cross-connection Controls and Pressure Testing Procedure** outline the requirements for protecting the potable water system and keeping it separate from the recycled water system.

- **Sample Forms and Site-Specific Details** provides a summary of steps to obtain recycled water, templates of sample forms to help with inspections and a location for information specific to the use-site.
- **Local Governing Agencies** provides the names, addresses and phone numbers of agencies responsible for the regulatory administration of water recycling activities.
- **Definitions** are included for terms used within the Manual.



SECTION A RECYCLED WATER & REGULATIONS

WHAT IS RECYCLED WATER?

Recycled water as used in this Manual and defined in Title 22, Chapter 3 of the California Code of Regulations, refers to tertiary-treated water produced from the three-stage treatment of municipal wastewater. It is municipal wastewater collected from homes and businesses that receives a high level of treatment at a water reclamation plant. It is monitored 24/7, water quality samples are collected and tested to ensure permit regulation limitations are met, so that it can safely be beneficially reused. It is no longer considered wastewater.

A producer of recycled water that meets the requirements of the Uniform Statewide Recycling Criteria are facilities known as Water Recycling (or Reclamation) Plants. The recycled water produced by these plants is delivered to Customers through distribution

systems owned and operated by a Recycled Water Distributor. Recycled Water Producers and Distributors can be one and the same entity, such as CVWD.

The appearance of recycled water is identical to domestic water. Recycled water produced by CVWD meets the State's criteria for tertiary disinfected recycled water. It is virtually colorless and odorless and is allowable for full-body human contact but **not** for direct human consumption. The sensible use of recycled water affords an excellent choice for essentially all nonpotable applications. Properly managed recycled water is safe to use.

CVWD WATER RECLAMATION PLANTS

CVWD owns and operates two water reclamation plants (WRPs) that treat and deliver recycled water.

WRP10 is located in Palm Desert. The design capacity of the tertiary treatment system at WRP10 is 15 MGD. WRP10 is the delivery destination for canal water in the Mid-Valley Pipeline. The Mid-Valley Pipeline transports canal water from the Coachella Branch of the All-American Canal to WRP10 and provides canal water to several golf courses along its nearly 7-mile stretch, delivers canal water to the Palm Desert Groundwater Replenishment Facility, and supplements WRP10's supply of recycled water with canal water to meet the needs of the nonpotable water customers downstream of WRP10. WRP10 has two distribution systems that provide nonpotable water to its downstream customers. One is a low-pressure system, which recycled water and/or canal water leaves the plant at 85 psi. The other system is a high-pressure system which pumps recycled water and/or canal water out at 135 psi. WRP10 began delivering recycled water in 1987 and serves a blend of canal water and disinfected tertiary recycled water to golf courses, homeowner's associations, high school athletic fields, and the landscaped areas at CVWD's Palm Desert facilities.

WRP7 is located in North Indio. The design capacity of the tertiary treatment system at WRP7 is 2.5 million gallons per day (MGD). Since 1997, WRP7 has served a blend of canal water and disinfected tertiary recycled water to nonpotable water customers, which are golf courses.

Customers using disinfected tertiary recycled water from WRP7 or WRP10 for golf course and landscape irrigation, operated under the general statewide recycled water Board Order WQ 2016-0068-DDW and abide by CVWD's Recycled Water Ordinance #1440.1 and Recycled Water Permit.



THE RECYCLED WATER TREATMENT PROCESS

Wastewater, which is recycled for reuse, is made up of two components that must be broken down or removed for treatment: organic waste and inorganic waste. Organic waste is that which can be broken down and treated biologically. Inorganic waste, which must be removed from the wastewater stream, is unable to be biologically broken down and treated. That being said, as wastewater enters a plant, it is first mechanically screened to remove large inorganic debris such as rags, paper products and sticks. These removed materials are hauled away to an approved disposal facility. Sedimentation tanks are used to remove the remaining smaller inorganic material such as sand, grit and rocks. This is considered the primary treatment process.

The organic waste continues to the secondary treatment process, also called the activated sludge process. This is a biological process which takes place in large aeration basins. In these basins, the organics in wastewater provide food for trillions of microorganisms. While these microorganisms are busy consuming organic waste, the aeration basin provides dissolved oxygen to help keep the microorganisms alive.

The broken-down organic waste, now considered to be activated sludge, settles to the bottom of a clarification tank. The sludge then moves to the belt press process where the sludge is squeezed between two belts and a series of rollers. The belt press process produces a sludge cake of approximately 15% to 18% solids. The clear water separated from the sludge in the clarification tank is called secondary effluent. Secondary effluent water is further treated for various stages of recycled water. The sludge cake, also called biosolids, is hauled away by composting companies to undergo another treatment step before becoming compost.

The next level of recycled water is called tertiary disinfected recycled water. Tertiary treatment is achieved when secondary effluent is sent through a filtering station and disinfected. The filtered water is chlorinated to kill any residual bacteria and viruses which could potentially be harmful. When the process is finished, the tertiary disinfected recycled water will meet the Title 22 regulations and requirements and is only one step below drinking water standards. At other facilities, the tertiary treatment process could also include ultra-violet light, microfiltration, and/or reverse osmosis.

BENEFITS OF RECYCLED WATER IRRIGATION

With population growth comes an increased demand for limited potable water supplies and greater concern about the use of potable water for irrigation. There is also uncertainty about the reliability of imported water supplies. The future dependence upon using these two water supplies for nonpotable water purposes is questionable, making recycled water more attractive as an alternative water supply. The amount of recycled water available is generally not affected by drought, meaning recycled water customers don't risk losing expensive landscaping due to water shortages and potential mandatory rationing.

Tertiary disinfected recycled water can be used for virtually all nonpotable applications (See page 48 for the WaterReuse Association's list of recycled water uses allowed in California). Recycled water may also contain a beneficial nutrient content, such as nitrogen, potassium, calcium, magnesium, sulfur, and other macro and micronutrients, which may provide some level of fertilization during the irrigation process. A full recycled water quality analysis can be obtained from CVWD. See Section J for tips to help customers understand the full benefits of irrigating with recycled water. Irrigation with recycled water is making use of a valuable resource that would otherwise be disposed of.



NEED FOR REGULATIONS

Regulations make the use of recycled water possible. Regulations ensure consistent, reliable water quality while being fully protective of public health. California Code of Regulations Titles 22 and the State Water Board's Cross-Connection Control Policy Handbook (CCCPH) are the two sets of regulations that accomplish this. Title 22 establishes the requirements for recycled water treatment, quality and allowable use. The CCCPH establishes the requirements for backflow protection of the potable water supply. Both Title 22 and CCCPH regulations can be found in the Statutes and Regulations which contain all of the California Health laws related to recycled water and are located on the following websites:

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/cccp.html

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Lawbook.html

Recycled water is a safe and effective resource for nonpotable use. Properly managed recycled water has a very limited health risk, if any. To help in the proper management of recycled water, the State of California, the local city or county Health Department and CVWD have developed rules and regulations for the safe use of recycled water. These rules and regulations are in place to manage the risks associated with the use of recycled water and are protective of the customer, its Recycled Water Recycled Water On-site Supervisor and employees, and the public. These rules and regulations keep the following concepts in mind for the safe use of recycled water:

- Because recycled water is not suited for human consumption, every effort must be made to prevent the customer's recycled water system from being cross-connected with the potable (drinking) water system.
- Plans must be carefully reviewed to ensure against cross-connections and that proper equipment is to be installed.
- The recycled water system must be operated under the authority of a Nonpotable Water Agreement that outlines any special considerations or requirements for the particular use site.
- The customer must obtain a Recycled Water Permit from CVWD for the discharge of recycled water.
- The customer must designate a Recycled Water Recycled Water On-site Supervisor who is responsible for managing the on-site water system. The Recycled Water Recycled Water On-site Supervisor ensures the system is operated within the established guidelines and is properly maintained.
- In cooperation with the Customer, CVWD will make regular inspections of the site.
- The customer must instruct all people with access to recycled water on their property of its proper use and precautions.
- All piping and points of connection must be labeled with "Recycled Water -- Do Not Drink" and the universal "Do Not Drink" symbol.
- All recycled water use areas accessible to the public must be posted with signs visible to the public and must include the statement "Recycled Water – Do Not Drink" and the "Do Not Drink" symbol.
- An initial cross-connection test must be conducted to determine if there are any unknown connections between existing irrigation and potable piping prior to construction of retrofit work.

- After connection to the recycled water distribution system, a follow-up cross-connection test must be performed to verify that construction or retrofit work was performed correctly.
- In the event of a cross-connection incident, the Customer must implement an emergency response plan.
- In the event of a spill, the customer must report the event.

REGULATORY AUTHORITY

Rules and regulations for the end use of recycled water are established and/or enforced by the State Water Resource Control Board, California Regional Water Quality Control Board (Regional Board), the Division of Drinking Water, the local city or county Health Department, and CVWD. These rules and regulations are typically contained in a permit from the Regional Board issued to CVWD for the wastewater treatment plants, the State Board to CVWD for the distribution and use of recycled water, and CVWD's Recycled Water Ordinance to the customers for discharging recycled water for golf course, landscape and agricultural irrigation.

The State Water Resources Control Board's Water Reclamation requirements for recycled water use may be found in Board Order WQ 2016-0068-DDW.

https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2016/wqo2016_0068_ddw.pdf

CVWD's rules and regulations for the use of recycled water may be found in the Recycled Water Ordinance 1440.1.

<https://cvwd.district.codes/CVWDC/3.35>

All facilities using recycled water must be designed and operated to meet the standards of the local governing codes, rules and regulations. From time to time there may be amendments to existing regulations. These amendments may be made without the knowledge or consent of the customer or CVWD. These amendments will be enforced upon their effective date. CVWD will make every effort to notify the customer of these changes when they occur, but the customer bears the ultimate responsibility for compliance and should check the reference website on a regular basis to determine whether changes are proposed or have occurred.

SYSTEM RESPONSIBILITY

CVWD is responsible for the operation and maintenance of its recycled water distribution system up to the point of connection to the customer. It is the responsibility of the customer to maintain its recycled water system downstream of the point of connection with CVWD's distribution system. The customer is responsible for ensuring that the recycled water is used on its site according to all the rules and regulations regarding such use. Specifically, the Customer is responsible for the following:

- Maintaining the use site's recycled water system.

- Ensuring that all materials used during the design, construction and maintenance of the system are approved or recommended for recycled water use by the AWWA California-Nevada Section's Guidelines for the On-site Retrofit of Facilities Using Disinfected Tertiary Recycled Water and meet CVWD's Development Design Manual, Landscape Ordinance, and Recycled Water Ordinance.
- Obtaining all permits and payment of all fees required for the establishment, operation and maintenance of the Customer's recycled water system.
- Reporting all violations and emergencies to the required local governing agencies. A listing of these agencies is provided in Section H.
- Obtaining prior authorization from CVWD and any required regulatory agency before making any modifications to the approved recycled water system (or the potable water system if it's in close proximity to the recycled system).

NONPOTABLE WATER AGREEMENT AND PERMITS

A potential customer must complete all of CVWD's requirements prior to the issuance of a Nonpotable Water Agreement. (**Note:** Nonpotable Water Agreement is the term used to describe any agreement, contract, permit, ordinance, memorandum of understanding or other such document used by CVWD to present the terms and conditions for the use of recycled water by a customer.) CVWD reserves the right to alter, on a case-by-case basis, the Nonpotable Water Agreement.

A customer who has signed the Nonpotable Water Agreement will fill out and submit a Recycled Water Permit prior to being delivered recycled water.

RATE AND FEE SCHEDULE

Since recycled water is provided by a public entity, such as the water district, all rates and fees concerning recycled water service will be established and fixed by CVWD.

PROTECTION OF PUBLIC HEALTH

Regulating authorities reserve the right to take any action necessary with respect to the operation of the customer's on-site recycled water system in order to safeguard the public health.

AUTHORIZED USES

The use of recycled water is limited to those uses approved by the State Regulatory Agencies. Any other use of recycled water is prohibited without the prior approval, on a case-by-case basis, of CVWD and the appropriate Regulatory Agencies.

APPROVED USE AREAS

Recycled water may only be used in areas approved by CVWD, as indicated in the Nonpotable Water Agreement and the Recycled Water Permit, and as long as the customer meets all of the requirements of the Regulatory Agencies.

Subletting or reselling nonpotable water received from CVWD is not allowed. Nonpotable water is not to be delivered to property other than what is described in the Nonpotable Water Agreement nor acquired from an entity that is not operating under a Nonpotable Water Agreement with CVWD. A customer may **never** supply recycled water to another owner's adjoining property or to the property of the same customer across a street or alley without the prior written approval of CVWD and the appropriate Regulatory Agencies. The customer may not give or sell recycled water to another party. Should the property become subdivided, the service will be considered as belonging to the parcel it enters directly. If such a subdivision occurs, or property ownership is transferred, CVWD must be notified. In any case, recycled water lines are not permitted to cross lot lines.

All recycled water delivered to any site must pass through a recycled water meter owned by CVWD.

LIABILITY

The customer is responsible for the operation and maintenance of the recycled water system downstream of CVWD's point of connection with the customer, unless such responsibility is clearly outlined in the Nonpotable Water Agreement/Permit.

CVWD shall not be liable for any water damage or other damage caused by the customer due to defective or broken plumbing or faulty service, nor shall CVWD be liable for damage caused by the customer's facilities. This includes changes in the recycled water quality that may occur from sitting in ornamental lakes, storage tanks, pipelines, or other recycled water storage or conveyance facilities.

WATER SUPPLY CONTINGENCY

If at any time during construction or operation of the recycled water system, real or potential hazards are found, CVWD has the right and the responsibility to immediately suspend, with or without notice, recycled water service in the interest of protecting the public health. The customer will implement their back-up irrigation water source or may request a temporary supply of potable water to the affected area from CVWD with the appropriate backflow protection device.

SECTION B DESIGN & CONSTRUCTION

DESIGN APPROVAL

Before the construction of any new or major modifications of an existing recycled water system, please refer to CVWD's Landscape and Irrigation System Design Criteria in Ordinance # 1302.5, CVWD's Recycled Water Ordinance 1440.1, and the CVWD Development Design Manual. The development design must be submitted for approval by CVWD and the appropriate State regulatory agencies. Approval will be contingent upon evidence that all applicable design requirements, rules and regulations for a recycled water system are satisfied. Dual plumbed sites will need to follow the Nonpotable Water Plan Checklist found at the following link:
<https://www.cvwd.org/DocumentCenter/View/7659/Nonpotable-Water-Plan-Checklist->

Plans and specifications should include, but not be limited to, the following:

- A detailed description of the intended use of recycled water, including identification of the area of use.
- Details showing the complete potable and recycled water systems. For existing facilities converting to recycled water use, details must include the exact location of all existing water piping systems.
- Details of the intended installation procedures, including as a minimum: backflow preventer locations, color and type of pipe, and additional signage to be used.



CONSTRUCTION

The appropriate regulatory agencies and CVWD shall have the opportunity to make periodic inspections of the customer's site during the construction phase, if applicable, to ensure materials and their installations are according to the approved plans and specifications.

CVWD and/or the State's authorized agents shall inspect the construction and startup of the Customer's recycled water system to ensure that it is in compliance with the approved construction plans, rules and regulations. In addition, representatives of the Regional Water Quality Control Board and the Division of Drinking Water may be involved.

This site inspection is to ensure that proper equipment was used, spray patterns are adjusted to ensure proper coverage without excessive overlapping, and there are no cross-connections with the on-site potable water system. Conditions that might create runoff, ponding or windblown spray, especially on slopes, must be corrected.

Spray patterns must be checked to make sure that they don't encroach upon public facilities such as drinking fountains, dining or food preparation sites or areas outside the approved use area. After correction and verification, the system will be allowed to use recycled water.

RECYCLED WATER DELIVERY SYSTEM OPERATION

CVWD reserves the right to control and schedule the use of recycled water, if control and scheduling are necessary to maintain acceptable working conditions within CVWD's water distribution system. CVWD will administer these and other service conditions.

If the available service pressure is higher than the customer can accept, the customer shall be responsible for providing a pressure-reducing valve downstream of the service meter. If available pressure is lower than what the customer needs, the customer shall be responsible for providing booster pumping downstream of the meter. Any pumping of recycled water requirements shall be described in the design plans and specifications submitted to and approved by CVWD.

CVWD must ensure that the quality of the recycled water in its distribution system is not compromised by any customer. Therefore, CVWD may require backflow protection on the customer's recycled water system, such as an air gap, swivel ell, or reduced pressure principle backflow prevention assembly. This backflow protection might be just downstream of the recycled water meter or at specific, on-site location(s) where an activity of the customer (such as fertilizer injection) could degrade the quality of the recycled water in the distribution system. If necessary, details will be included in the Nonpotable Water Agreement.

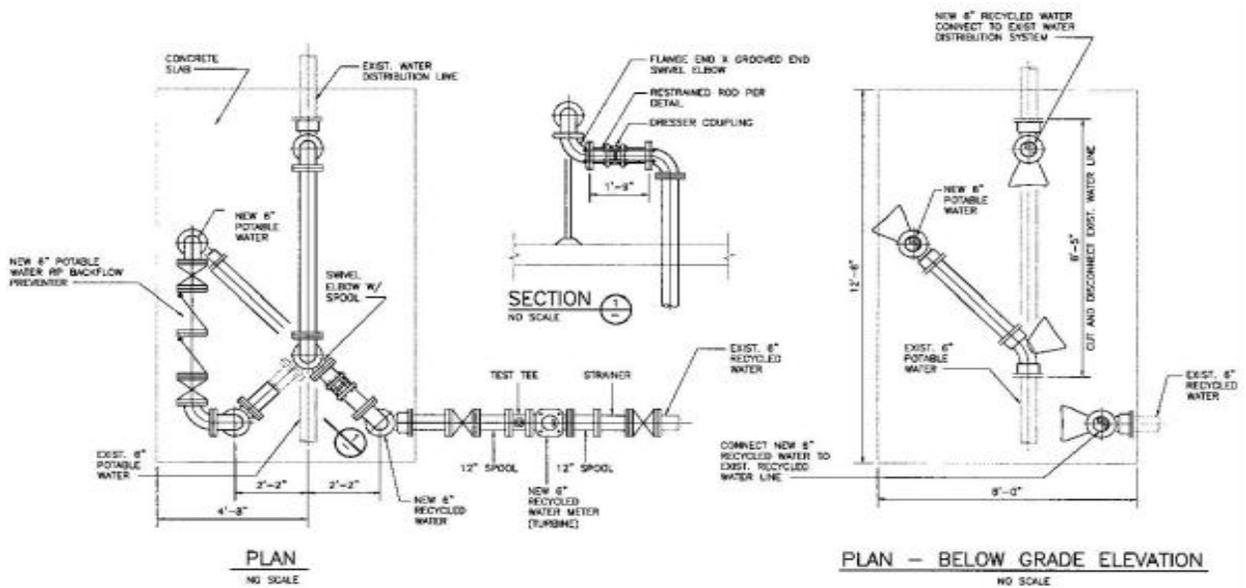
Backflow prevention devices must be approved by CVWD and the appropriate regulatory agencies. Devices will be properly maintained, inspected quarterly and tested at least annually by CVWD. Backflow prevention assemblies, when required on recycled water systems, must be conspicuously labeled.

Backup Water Source

It is understood that CVWD's recycled water supply is subject to interruption and that at times the customer may be required to meet its irrigation demands with a backup supply of water, either solely or in conjunction with CVWD's available supply of recycled water. For this reason, the customer shall have a backup supply available equal to 100% of its peak irrigation water demands, and the customer's irrigation system shall be capable of operating in tandem with CVWD's facilities in order to augment deliveries as and when required.

If potable water is to be used as a backup source to the recycled water system, it must be done only through an air-gap separation between the two systems and with the prior approval of the Division of Drinking Water. The Division of Drinking Water permits the use of a "swivel-ell" assembly (see sample schematic, below) that allows for the use site's water supply to be switched between the recycled and potable water systems, if certain stringent requirements are met.

Sample schematic drawing of a "swivel-ell" assembly for a back-up potable water supply.



FIRE PROTECTION SYSTEMS

Some recycled water use sites may also have separate potable water service connections for dedicated fire protection systems. An approved backflow prevention assembly that meets the CCCPH requirements for the type of fire protection in use will be required. Since requirements vary from place to place, the exact requirements will be provided to the customer by CVWD and the State Regulatory Agencies.

PROTECTION OF GROUNDWATER

Irrigation with recycled water within 50 feet or impoundment of recycled water within 100 feet of any drinking water reservoir or domestic water well is prohibited, unless otherwise approved by the State Regulatory Agencies. There shall be no direct or indirect discharge of recycled water into any on-site domestic or irrigation supply well as a result of recycled water storage or use.

SERVICE STARTUP

Following the acceptance of the customer's recycled water system by CVWD, the Customer may request regular service startup. Upon receipt of the startup request, CVWD will notify the appropriate regulatory agencies, and schedule a final inspection.

SECTION C OPERATION & MAINTENANCE

GENERAL

Recycled water service will be provided by CVWD only to those customers who have a current Nonpotable Water Agreement and Recycled Water Permit for such service, unless otherwise determined by CVWD's Governing Board. This recycled water service can be revoked any time at the discretion of CVWD.

Recycled water service must be made available only in accordance with all applicable Federal, state, and local statutes, ordinances, regulations and contracts, and other requirements including the California Water Code, the California Code of Regulations

Title 22 , CCCPH, and requirements and regulations imposed by the Regional Water Quality Control Board, the Division of Drinking Water, the local city or county Health Department and/or CVWD. The customer must comply with the conditions of any Nonpotable Water Agreement issued by CVWD.

CONDITIONS OF SERVICE

The customer must comply with the following conditions. CVWD will not deliver recycled water to customers that do not or will not comply with the following use site conditions:

Runoff Conditions

The irrigation systems must be designed, constructed and operated to minimize to the fullest extent practical runoff outside the approved use area.

Incidental runoff must be controlled. Incidental runoff is defined as unintended small amounts (volume) of runoff from recycled water use areas, such as unintended, minimal over-spray from sprinklers that escapes the recycled water use area. Water leaving a recycled water use area is not considered incidental if it is part of the facility design, if it is due to excessive application, if it is due to intentional overflow or application, or if it is due to negligence. Incidental runoff may be regulated by waste discharge requirements or, where necessary, waste discharge requirements that serve as a National Pollutant Discharge Elimination System (NPDES) permit, including municipal separate storm water system permits, but regardless of the regulatory instrument, the project shall include, but is not limited to, the following practices:

1. Implementation of an operations and management plan that may apply to multiple sites and provides for detection of leaks, (for example, from broken sprinkler heads), and correction either within 72 hours of learning of the runoff, or prior to the release of 1,000 gallons, whichever occurs first,
2. Proper design and aim of sprinkler heads,
3. Refraining from application during precipitation events, and
4. Management of any ponds containing recycled water such that no discharge occurs unless the discharge is a result of a 25-year, 24-hour storm event or greater, and there is notification of the appropriate Regional Water Board Executive Officer of the discharge.

Ponding Conditions

The irrigation systems must be designed, constructed and operated to minimize to the fullest extent practical ponding within or outside of the approved use area. This does not apply to approved impoundments such as golf course water hazards or decorative lakes.

Windblown Spray Conditions

The irrigation systems must be designed, constructed and operated to minimize to the fullest extent practical windblown spray from leaving the approved use area.

Unapproved Uses

Use of recycled water for any purposes other than those explicitly described in Board Order WQ 2016-0068-DDW Water Reclamation Requirements for Recycled Water Use or CVWD's Recycled Water Ordinance is strictly prohibited.

Use in Unapproved Areas

The delivery and use of recycled water for any reason, including approved uses, in areas other than those explicitly approved in the current effective customer permit and without the prior approval of the appropriate Regulatory Agencies, is strictly prohibited.

Cross-Connections

Cross-connections, as defined by the CCCPH, resulting from the use of recycled water or from the physical presence of a recycled water service, whether by design, construction practice, or system operation, are strictly prohibited. If any cross-connection is discovered, the customer shall immediately turn off the system, notify CVWD and implement the Emergency Cross-Connection Response Plan.

DESIGNATION OF RECYCLED WATER ON-SITE SUPERVISOR

It is the customer's responsibility to provide surveillance and supervision of its on-site recycled water system in a way that assures compliance at all times with current regulations and the recycled water permit requirements. The customer shall designate, with notification going to CVWD, a Recycled Water On-site Supervisor to be the contact person with CVWD.

The following are requirements of the Recycled Water On-site Supervisor position:

- Responsible for the operation and maintenance of their recycled water distribution system.
- Responsible for the installation, operation, maintenance and distribution of the customer's irrigation system.
- Implementation of the requirements of the rules and regulations related to the use of recycled water.
- Prevent potential cross-connection hazards.
- Maintain the distribution system plans in "as-built" form.
- Have knowledge of the location of the domestic water system and ensure that it remains the appropriate separation distance from the recycled water distribution system.
- Receive training and maintain certificate of completion once every three years.
- Be familiar with this Manual.
- Be available to CVWD at all times and have the authority to carry out any requirements of CVWD.
- Ensure that notification signs at the use site are properly installed and maintained, and that all recycled and potable water facilities are properly labeled, tagged or otherwise identified.

- Be knowledgeable of the provisions contained in Title of the California Code of Regulations and the CCCPH relating to the safe use of recycled water and maintain accurate records.
- Ensure that all employees of the use site involved with the use of recycled water are instructed in the safe and responsible use and handling of the recycled water by conducting an annual safety tailgate.
- Immediately inform CVWD of any failures, violations and emergencies that occur involving the recycled or potable water systems.
- Be familiar with the basic concepts of backflow and cross-connection prevention, system testing, and related emergency procedures, and be present and participate in any cross- connection tests and site inspections.
- Be prepared to enact the emergency response plan.
- Keep copies of the Statewide permit, CVWD Recycled Water Ordinance 1440.1, Recycled Water Permit, Nonpotable Water Agreement and certificate of completion for Recycled Water Recycled Water On-site Supervisor Training Event.

CVWD must be notified immediately of any change in personnel for the Recycled Water On-site Supervisor position. CVWD will provide the Recycled Water On-site Supervisor with the results of periodic inspections of the customer's system. CVWD will report all violations to the appropriate Regulatory Agency according to applicable procedures established by law, code, permit or practice.

PERSONNEL TRAINING

All employees at the recycled water use site must be trained in the proper use of recycled water annually by the Recycled Water Recycled Water On-site Supervisor. Supervisory personnel and the Recycled Water Recycled Water On-site Supervisor should be held accountable to ensure that employees are not using recycled water carelessly or improperly. It is the responsibility of the customer to train all operations personnel, so they are familiar with the use of recycled water. Any training program should include, but not be limited to, the following bullets. Site operations personnel must:

- Be aware that recycled water, although highly treated, is non-potable. **Recycled water may never be used for human consumption.**
- Understand that working with recycled water is safe when used as approved for the intended purpose and the rules and regulations for the use of recycled water are followed.
- Understand that conditions such as ponding, overspray and runoff are not allowed and should be corrected immediately.

- Follow good personal hygiene (for example, washing hands with potable water and soap after working with recycled water and promptly disinfecting and bandaging cuts and abrasions).
- Have knowledge of the location of the domestic water and the recycled water systems and understand that there is never to be a direct connection between the recycled water system and the potable water system.
- Use purple pipe for installation and repairs of the recycled water distribution system's appurtenances.
- Repair leaks and pipeline breaks as soon as possible.
- Take adequate measures to minimize public contact with recycled water.

PERIODS OF OPERATION

Operation of the customer's on-site recycled water system must adhere to the following requirements:

- Irrigation may only occur in the approved areas during periods of least use by the general public. This is usually between the hours of 6 p.m. and 6 a.m.; however, areas where public access is generally prohibited or minimized, such as commercial nurseries and freeway landscaping, may be irrigated at any time with supervision. Irrigation of public areas during other times may be performed if the irrigation system is operated manually and is supervised to avoid inadvertently exposing any members of the general public. This provision must be strictly followed.
- The recycled water system must be operated to prevent overspray or windblown spray into unapproved areas. Inadvertent public contact with recycled water irrigation spray must always be avoided.
- Consideration should be given to allow reasonable dry-out time before the area is to be used by the public.
- Recycled water runoff, overspray, and ponding are to be prevented.
- The recycled water system must not be allowed to operate for periods longer than needed to satisfy the landscape water requirements. Recycled water must never be applied at a rate that is greater than the infiltration rate of the soil. Exceptions to this requirement for purposes such as leaching of soil are acceptable.



Inadvertent public contact with recycled water irrigation spray must always be avoided.

HOSE BIBBS

Hose bibbs or other appurtenances that might allow public access to the recycled water system for unapproved use or for cross-connection to the potable water system are strictly prohibited in all areas accessible to the general public. In these areas, only quick couplers are allowed and must be of a different type than those that may be used on the use site's potable water system.

Hose bibbs may be used on the recycled water system in areas that do not allow any public access but must be conspicuously labeled **“RECYCLED WATER -- DO NOT DRINK”** in both English and Spanish (or any other language determined by CVWD to be in common use in the area), along with the “Do Not Drink” symbol. Workers in these areas must be instructed not to drink from these hose bibbs.



Hose bibbs may only be used with recycled water in areas where they cannot be accessed by the general public (such as this commercial nursery), and even those must be properly labeled.

DRINKING FOUNTAINS

Drinking fountains located within the approved use area must be protected from contact with recycled water by direct application through irrigation or other approved use. Lack

of protection, whether by design, construction practice or system operation, is strictly prohibited. (Division of Drinking Water approved drinking fountain cover on page 50).



The pattern on the walls indicates that this drinking fountain is being sprayed by the irrigation water. If recycled water is to be used, then the spray pattern must be altered or the drinking fountain somehow shielded.

EQUIPMENT CLEANING

Any device, hose, pipe, meter, valve, tank, pump, truck, etc. which has been used with recycled water may not be used to convey potable water nor attached to the potable water system unless it is cleaned and properly disinfected.

MODIFICATIONS

The customer shall maintain the on-site recycled water system in “as-built” form. Routine maintenance of the irrigation system, such as pipeline repairs, sprinkler replacement and other similar activities that do not result in modification to the “as-built” for of either the recycled or potable water systems, or any agreed to operating plans, do not need prior approval by CVWD or regulatory agency. Prior to modifying the existing recycled water system or constructing new recycled water facilities, the customer shall obtain approval from CVWD and the appropriate regulatory agencies. This includes modifications to the approved plans or to an operational system. Detailed plans of any modifications to the se plans should be submitted to and approved by CVWD in accordance with WQ 2016-0068-DDW, Title 22, CCCPH, and CVWD’s Recycled Water Ordinance and the modifications are to be inspected by CVWD vefore being placed in operation.

Emergency modifications or repairs that must be made by the customer to its system in order to prevent contamination, damage or a public health hazard are covered under *Emergency Procedures*.

MAINTENANCE

The customer must implement a preventive maintenance program that will ensure that the recycled water system always remains in compliance. A preventive maintenance program should include but not be limited to the following:

- Regular inspections of the entire recycled water system including sprinkler heads, spray patterns, piping and valves, pumps, storage facilities, lakes, controllers, signage, etc should be conducted by the customer. Immediately correcting any problems.
- All notification signs, labels and/or tags should be checked for their proper placement and readability. Replace damaged, faded, or unreadable signs, labels or tags.
- Special attention should be given to spray patterns to minimize ponding within approved use areas, prevent runoff of recycled water outside the approved use area, and prevent spray or mist from entering dwellings, designated outdoor eating areas or food handling facilities and prevent windblown spray conditions.
- Establish and maintain an accurate records-keeping system of all inspections, modifications and repairs.
- Broken sprinkler heads, faulty spray patterns, leaking pipes or valves, etc. must be repaired when the malfunction becomes apparent.
- A maintenance program for backflow prevention assemblies that includes at least annual testing by a tester certified by the American Backflow Prevention Association (ABPA) or AWWA will be carried out by CVWD. Records of annual tests, repairs and overhauls will be kept by CVWD and made available to State regulatory agencies, as needed.

PERIODIC SITE INSPECTIONS

Quarterly site inspections of the customer's recycled water irrigation system will be performed by CVWD. Such inspections include, at a minimum, the visual inspection of all back-flow prevention devices, booster pumps, drinking fountains, exposed piping, valves, pressure reducing stations, points of connection, sprinklers, controllers, evidence of ponding, overspray, and runoff, lakes or other recycled water storage facilities, signs, labeling, tags, etc. The Recycled Water On-site Supervisor's maintenance records should also be inspected.

CVWD also reserves the right to make unannounced inspections of the use site's facilities, although at reasonable times. Upon completion of the inspection, a Site Inspection Report Form (see example, page 39) is to be signed and dated by both the Recycled Water Recycled Water On-site Supervisor and the CVWD employee performing the inspection. The original form should be kept by CVWD with copies going to the Recycled Water On-site Supervisor, and any required regulatory agency. Should a cross-connection be discovered during the inspection, the Emergency Cross-Connection Response Plan should be immediately invoked by the Recycled Water On-site Supervisor.

EMERGENCY PROCEDURES

In case of a major earthquake, the Recycled Water On-site Supervisor should immediately inspect the potable and recycled water systems for damage. If either system

appears damaged, both water systems should be shut off at their points of connection. The Recycled Water On-site Supervisor should immediately contact CVWD for further instructions.

Emergency Modifications

Emergency modifications or repairs can be made by the customer to the recycled water system without the prior approval of CVWD to prevent contamination, damage or a public health hazard. As soon as possible, the customer must notify CVWD of the emergency modifications and may be required to file a written report.

Unauthorized Discharge

It's the responsibility of the customer to report to CVWD, California Office of Emergency Services and the Regional Board any spill incident that endangers human health or the environment in accordance with Section 13529.2 of the California Water Code, which specifies that any unauthorized discharge of more than 50,000 gallons of tertiary disinfected recycled water in or on waters of the State shall be reported. An immediate oral report followed by a written report is required.

If there is a reportable spill, then a notification must be provided:

As soon as that person has knowledge of the discharge, when notification is possible, and when the notification can be provided without substantially impeding cleanup or other emergency measures.

The initial notification must be provided orally to both CVWD and Regional Board and will need to include:

- The location of the spill
- The amount of the spill
- The cause of the spill
- The amount of recycled water recovered

Five days after the discovery of the spill a written report regarding the spill is due to both CVWD and Regional Board and will need to include:

- The location of the spill,
- The amount of the spill,
- The cause of the spill,
- The amount of recycled water recovered,
- Remedial actions taken or planned, and
- A timeline for implementation of any planned remedial measures.
- Any additional information requested by CVWD and/or the Regional Water Quality Control Board

Contamination of Drinking Water

In case of contamination of the potable water system due to a cross-connection on the customer's premises, CVWD must be immediately notified. The customer must immediately invoke the Emergency Cross-Connection Response Plan.

VIOLATIONS

CVWD is required to report violations to the Division of Drinking Water and/or the Regional Board if a violation of the rules and regulations related to recycled water use has occurred. Violations may include non-compliance of any of the following prohibitions: runoff conditions, ponding conditions, windblown spray conditions, leaks or spills resulting from broken or damaged pipelines or appurtenances, unapproved uses, disposal in unapproved areas, cross-connections, unprotected drinking fountains and unauthorized or prohibited use of hose bibbs, whether willful or by accident. Any willful or accidental act of noncompliance with any existing Federal, state or local ordinance, code, law or statute regulating the use of recycled water constitutes a violation.

NOTIFICATION

It is the responsibility of the Recycled Water On-site Supervisor to immediately notify CVWD of any failure or potential cross-connection in his/her recycled or potable water system, whether or not he/she believes a violation has occurred. It is also the responsibility of the Recycled Water On-site Supervisor to immediately notify CVWD of any violation he/she believes might imminently occur because of any action the customer's personnel might take during the operation of the recycled or potable water systems. If there are any doubts about whether a violation has occurred, it is the responsibility of the Recycled Water On-site Supervisor to report each occurrence to CVWD so a decision can be made. It is then CVWD's responsibility to notify the appropriate regulatory agencies of any violations. These agencies are listed in Section H.

CORRECTIVE ACTION

If CVWD's investigation reveals that a violation has occurred on the reuse site, the customer will be immediately notified of the violation and what corrective actions must be taken. It is the responsibility of the customer to immediately initiate corrective action to eliminate the violation. If CVWD believes the violation constitutes a hazard to the public health, CVWD must immediately stop recycled water service to the customer.

It will be at the discretion of CVWD and the regulatory agencies to decide if a violation has been adequately corrected.

ENFORCEMENT

CVWD shall enforce all existing regulations concerning the use of recycled water and/or recycled water systems. Regulations concerning the use of any recycled water or recycled water system shall be applied with equal force and effect to any person, persons, or firm, public or private. **There will be no deviations from these regulations** except upon written authorization of the State or Regional Board, acting within applicable regulations.

CAUSES FOR TERMINATION OF SERVICE

CVWD reserves the right to revoke a Nonpotable Water Agreement if any or all of the service conditions are not satisfied at all times. Service to a customer may be terminated at any time if any of the following occurs:

- CVWD's distribution system is not capable of supplying recycled water.

- The quality of the recycled water does not comply with the requirements of the Regulatory Agencies.
- The customer's operation does not conform to all applicable regulations, permit requirements and/or the terms of the Customer's agreement.
- There is nonpayment of service fees and charges by the customer.

SECTION D MARKING & EQUIPMENT

GENERAL

All materials, apparatus, piping, valves, controllers, sprinkler heads, pumps etc. for new recycled water irrigation systems must be approved for use in a pressurized recycled water system and installed according to approved plans. The recycled water system must conform to the AWWA California-Nevada Section's Guidelines for the On-site Retrofit of Facilities Using Disinfected Tertiary Recycled Water and be approved by the appropriate regulatory agencies. Deviations will not be allowed without prior approval.

System installation must conform to the rules and regulations related to recycled water and CVWD's Development Design Manual. The approved use area must be clearly marked. All outlets from the recycled water system must be marked "**CAUTION -- RECYCLED WATER -- DO NOT DRINK.**" In addition, signs must be posted at all entrances to the use site indicating that recycled water is used for irrigation purposes. The "Do Not Drink" symbol must be present on all signs.

PIPING, BELOW-GRADE

All new piping must be installed according to the approved plans and marked as required. Installation must be in accordance with the latest edition of International Association of Plumbing and Mechanical Officials (IAPMO) Standard IS-8. Fittings, primers and solvents must be IAPMO listed. All new recycled and potable water lines (pressure/non-pressure), new and existing valve boxes and appurtenances must be identified to clearly distinguish between recycled water and potable water systems.

Identification of Recycled Water Lines

All new, buried recycled water lines (pressure/non-pressure) must be extruded purple-colored Schedule 40 (minimum) PVC pipe with continuous wording "**CAUTION -- RECYCLED WATER**" printed on opposite sides of the pipe. The use of continuous lettering on 3-inch minimum width purple tape with 1-inch black or white contrasting lettering bearing the continuous wording "**CAUTION --RECYCLED WATER**" permanently affixed along the top of the pipe or wrapped around the pipe. Identification tape must extend to all valve boxes and/or vaults and exposed piping.

Piping buried under pavement must be sleeved with the sleeve being at least two (2) inches larger in diameter than the irrigation pipe. When recycled and potable water lines cross, the recycled water line must be located at least 1-foot below the potable water line. If this separation is not possible, then either the recycled or potable water line must be

sleeved to 10 feet on either side of the crossover. Parallel recycled and potable water lines must be at least 10 feet apart, or at least 4 feet, if the recycled line is enclosed in a sleeve.



Recycled water pipeline installation with continuous purple warning tape.

Identification of Nonpotable Water Lines

Nonpotable water is water supplied from the nonpotable water system through an appropriate backflow prevention assembly. All nonpotable sanitary sewer mains (pressure/non-pressure) must be identified by continuous lettering on 3-inch minimum width orange tape with 1-inch contrasting lettering permanently affixed continuously atop all horizontal piping, laterals and mains. Identification tape must extend to all valve boxes and/or vaults, exposed piping, hydrants and quick couplers.

Identification of Existing Below-Grade Water Lines

Existing below-grade piping, whether recycled, potable or non-potable, need not be retrofitted to be marked unless the piping becomes exposed, such as during installation of new pipe or maintenance of existing pipe. The exposed section should be appropriately marked (as recycled, potable or non-potable) and replaced with purple pipe.

PIPING, ETC., ABOVE-GRADE

Where recycled water is being used, all above-grade recycled water pipelines must be appropriately labeled and color-coded purple to differentiate recycled water pipelines from potable and other nonpotable water pipelines. If purple pipe is not used, recycled water pipelines may be wrapped with purple warning tape having the words **“CAUTION -- RECYCLED WATER”** visible in contrasting black letters. Flexible conduits or hoses

must be clearly marked **“CAUTION -- RECYCLED WATER”** with each adapter or fitting painted purple.

Above-grade potable water pipelines must be labeled and color-coded blue to differentiate potable water pipelines from recycled and nonpotable water pipelines. Potable water pipelines may be wrapped with blue identification tape having the words **“POTABLE WATER”** visible in contrasting white letters.

Above-grade nonpotable water pipelines not containing recycled water must be appropriately labeled and color-coded yellow to differentiate nonpotable water lines from recycled water and potable water lines. Nonpotable water lines may be wrapped with yellow identification tape having the words **“NONPOTABLE WATER -- DO NOT DRINK”** visible in contrasting letters.

Exposed valve boxes, vaults, quick coupling valves, outlets and related appurtenances must be color-coded, labeled or tagged, to differentiate recycled water from potable water (that is, **“CAUTION – RECYCLED WATER -- DO NOT DRINK”** in black or white contrasting lettering on a purple background, or **“POTABLE WATER”** in white lettering on a blue background or **“NON- POTABLE WATER -- DO NOT DRINK”** in contrasting lettering on a yellow background).

Tags must be identified with the appropriate wording on both sides. Tags identifying recycled water must have both the appropriate wording and the “Do Not Drink” symbol.

New recycled water customers are allowed up to five years to come into compliance with above ground appurtenances transporting or discharging recycled water, as long as continual improvements are observed by CVWD staff and the Division of Drinking Water.

VALVES

Quick Coupling Valves

New quick coupling valves, made specifically for recycled water use, should be 3/4-inch or 1-inch nominal size and of brass construction with a normal working pressure of 150 psi. The covers on all new quick coupling valves must be permanently attached and made of purple rubber or vinyl with the words **“RECYCLED WATER”** imprinted on the cover and must be provided with a lock.

To prevent unauthorized use, the valve should be operated only with a coupler different from couplers used on the potable water system. New quick coupling valves should be installed approximately 12 inches from walks, curbs, headboards or paved areas. All new and existing quick coupling valves must be identified with an identification tag and installed in a marked valve box.



Quick coupler and valve box

Gate Valves

New gate valves should be installed in a marked valve box with crushed rock in the base and a notification tag on the valve operator.

Remote Control Valves

New and existing remote-control valves should be installed in a marked valve box with crushed rock in the base and an identification tag on the operator. For each valve system, remote control valves should be adjusted so the most remote sprinkler heads operate at the pressure recommended by the manufacturer giving a uniform distribution of water.

SPRINKLER HEADS

New sprinkler heads must be of the size, type, pressure, radius of throw and discharge has indicated on the approved plans. All new sprinkler heads, either permanent or temporary, should be of the approved type for use with recycled water and create the minimum amount of mist. Drainage through sprinkler heads is prohibited, and an anti-drain valve must be installed in the sprinkler riser as needed. Anchors on sprinkler risers should be provided as needed and maintained. Sprinkler heads must be kept in good repair at all times.

SYSTEM CONTROL DEVICES

New system controllers must be automatic with multiple start/stop times for any 24-hour period and installed according to the approved plans and local codes. Two color-coded diagrams must be prepared for the station and system for each controller. Each diagram should be sealed in plastic with one copy placed in the controller box and the other given to CVWD. All controllers must be marked with the words ***“RECYCLED WATER”*** in black 1-inch-high letters on a purple background.

STORAGE TANKS & IMPOUNDMENTS

All storage tanks, either stationary or portable, must be structurally sound and free from leaks. Each tank must be conspicuously marked with signs with the words ***“RECYCLED WATER – DO NOT DRINK”*** in black letters 2-inches high on a purple background. The “Do Not Drink” symbol should be present on all recycled water storage tanks.

Impoundments (lakes) that receive recycled water are classified as “unrestricted” (swimming and body contact allowed), “restricted” (no swimming or body contact, but non-contact activities such as fishing and boating allowed) or “ornamental” (no recreational activities allowed). All of these impoundments must have the recycled water valves and outlets marked or tagged with the words ***“RECYCLED WATER – DO NOT DRINK.”*** At restricted and ornamental impoundments, adequate measures must be taken to prevent body contact. All recycled water impoundments must be kept separate from potable water wells and reservoirs.

If any storage tank or impoundment receives both recycled and potable water, the potable water supply must be properly air-gapped to avoid a cross-connection.

OTHER DEVICES

All air/vacuum relief valves, valves, pressure reducing valves, pumps, pump control valves, etc., must be tagged or labeled indicating whether it is on the recycled water, nonpotable water or potable water system. Recycled water tags or labels must have a purple background with black lettering stating, ***“RECYCLED WATER – DO NOT DRINK.”*** The “Do Not Drink” symbol must be present.

Potable water tags or labels must have a blue background with ***“POTABLE WATER”*** in white lettering. Nonpotable water tags or labels must have a yellow background with ***“NONPOTABLE”*** in black lettering.

POSTING APPROVED USE AREA

Posting the use of recycled water is required at all entrances to the customer's facility and placed where they can be easily seen. The signs must indicate that ***“RECYCLED WATER”*** is in use. In addition, all signs must include the “Do Not Drink” symbol and use the words “do not drink,” in both English and Spanish (or other locally used language). Additional signing may be required by the Regulatory Agency on a case-by-case basis. Signs should be at a minimum of 4” x 8”.



Recycled water notification signs do not need to include such words as “Caution,” “Warning” or “Danger.”

“DO NOT DRINK” SYMBOL



SECTION E CROSS-CONNECTION CONTROL

PROTECTION OF POTABLE WATER SYSTEMS

On dual source sites where both potable water and recycled water exist, the potable supply must be protected against potential cross-connections. In lieu of an airgap, swivel-ells, or reduced-pressure principal backflow prevention (RP) assemblies are generally approved by the Division of Drinking Water and CVWD. If the customer is required to have a backflow at the water meter, CVWD will install, test and maintain the backflow assemblies. This is done according to the approved site-specific drawings. If an RP is installed, it must be tested annually. The annual device testing must be done by a backflow prevention assembly tester certified by the AWWA or other approved certifying organization.

INITIAL CROSS-CONNECTION TEST

Per CVWD's Recycled Water Ordinance, CVWD and the customer shall ensure that an initial cross-connection test is completed prior to connection for delivery of recycled water to the site. A cross-connection control test shall be conducted regularly and after any major irrigation system change. The tests shall be conducted by a certified cross-connection control specialist. All appropriate regulatory agencies are to be notified of the test procedures for their approval, scheduling of the test, and invited to observe the test being conducted. This test should follow the general guidelines outlined in Section F and abide by any recommendations of the regulatory agencies. The purpose of the test is to determine if there are any potential connections between the existing irrigation system and the potable water system. During the lifetime of the recycled water system, CVWD must periodically inspect the recycled water system to ensure compliance with all applicable rules and regulations. Additionally, CVWD may be required to perform periodic inspections of the system for cross-connections (including shut-down tests, when appropriate), depending on the use site characteristics.

A written report documenting the test results must be submitted to the Division of Drinking Water following completion. Upon the successful completion of one of the above tests, insuring no cross-connections between the potable and recycled water systems, the Customer's irrigation system may be connected by CVWD to the recycled water distribution system.

FOLLOW-UP CROSS-CONNECTION TEST

A cross-connection control test shall be conducted regularly and after any major irrigation system change. The tests shall be conducted by a certified cross-connection control specialist. On sites where both recycled and potable water are present, a cross-connection test must be performed at least once every four years for dual sourced sites and annually for dual-plumbed sites. This on-site test is to ensure the absolute separation of the recycled and potable water systems. CVWD shall coordinate the scheduling of the cross-connection test. Periodic testing using the same procedures may be required in the future, depending on the use site's characteristics. A written report documenting the follow-up test results for dual-plumbed sites must be submitted to the Division of Drinking Water following completion. A pressure shut down test procedure is detailed in Section F.

As an alternative to the pressure test, a dye test may be performed by charging the recycled water system with potable water containing food grade colored dye. The unpressurized potable water system is then checked for any evidence of the colored dye. If the dye is found, a cross-connection exists. This test itself must be done in a way that does not create a cross-connection.

Electrical conductivity analyses and chlorine residual analyses may be performed in conjunction with the pressure test and/or dye test to ensure that there is no cross-connection. The electrical conductivity analysis is viable when the potable and nonpotable supplies differ by more than 200 uS/cm.



CROSS-CONNECTION CONTROL TESTING (CCCT)

Periodic cross-connection control shutdown testing must be done at least once every four (4) years for dual sourced sites and annually for dual-plumbed sites, unless visual inspections or major on-site water system changes reveal a need for more frequent testing, such as if any reuse site undergoes significant modifications of the potable or recycled water systems. CVWD, in cooperation with the appropriate regulatory agencies, will make the determination if such a test is required. This test must follow the same procedures used for the cross-connection control test (either shut-down or dye test).

Before the follow-up test is performed, the Recycled Water On-site Supervisor must be notified. CVWD will coordinate the scheduling of the test. Written verification of the test results for dual-plumbed sites must be provided by CVWD to the Recycled Water On-site Supervisor and the Division of Drinking Water. All provisions of the Cross-connection Control Policy Handbook, concerning protection of drinking water systems against cross-connections and backflow, must be strictly complied with.

EMERGENCY CROSS-CONNECTION RESPONSE PLAN

In the event that a backflow incident or cross-connection is suspected or occurs the following procedures must be implemented immediately:

1. Keep the potable water system pressurized and, post ***“DO NOT DRINK” ---NO TOMAR*** signs at all potable water fixtures and outlets.

2. Immediately shut down the recycled water supply to the facility at the meter.
3. Notify CVWD.
4. CVWD will:
 - a. Notify the Division of Drinking Water.
 - b. Turn off the recycled water supply to the facility.
 - c. Flush the domestic water lines.
 - d. Collect bacteriological samples from the potable water system and perform a 24-hour bacteriological analysis (in consultation with the Division of Drinking Water). Water samples will be collected from the closest possible point to the cross-connection.
 - e. Report on the results to the Division of Drinking Water.
5. Identify the cause and location(s) of backflow and eliminate the cross-connection(s).
6. CVWD will conduct a cross-connection test to verify that all cross-connections have been eliminated.
7. Obtain approval from the Division of Drinking Water before returning the recycled water system to service.
8. If the bacteriological analysis conducted in Step 4.d. is positive, the potable water system will need to be disinfected by maintaining a chlorine residual of at least 50 mg/L for 24 hours. Otherwise proceed to Step 11. California Division of Drinking Water should be consulted concerning disinfection of the pipelines.
9. Flush the potable water system after 24 hours and CVWD will perform standard bacteriological analysis.
10. If the results from Step 9 are acceptable, proceed to Step 11. Otherwise, repeat Steps 8-9.
11. Obtain final approval from CVWD and the State before removing signs and restoring recycled water service.

SECTION F RECYCLED WATER USE SITE CROSS-CONNECTION TESTING PROCEDURE

The following are general guidelines for the testing procedure and may be modified upon request or with the approval of the Division of Drinking Water:

1. Pressure recorders will be installed throughout the recycled water irrigation system. The pressure recorders will be installed and activated approximately 30 minutes prior to depressurizing the irrigation system.

2. The irrigation supply reduced by approximately 60 psi, while the potable water system will remain active.
3. The irrigation system will be left off during the day for approximately four hours. During this time, a CVWD cross-connection specialist and the Recycled Water On-site supervisor will inspect pressure recorders for any spikes.
4. If any spikes exist, both CVWD's cross-connection specialist and the on-site recycled water supervisor will investigate the cause of the spike and determine if a cross-connection exists.
5. At the end of the four-hour test, the sprinkler stations will need to be activated.
6. If no cross-connection exists, the pressure recorders are removed.
7. A visual inspection, chlorine residual test and electrical conductivity test will be conducted on the domestic water system's facilities.
8. The potable water distribution system will be turned on to confirm that the domestic water supply is still active under pressure.
9. After the nonpotable irrigation and domestic water shutdown tests have been conducted the domestic water locations will be shut down and verified.
10. Chlorine residual and Electrical Conductivity tests are conducted on the potable system and the nonpotable system and the results are compared to ensure that the results differ. If the results are unsatisfactory, the cause is investigated to determine if a cross-connection exists.
11. If no cross-connection exists, then the domestic water service is restored.
12. Pressure recorders will then be installed on the domestic system. The recorders will be installed on the backflow devices that service the domestic system, club house and maintenance buildings, etc. The pressure recorders will be installed and activated approximately one hour prior to depressurizing the domestic system.
13. The domestic water will be depressurized and shut off during the evening for approximately 8 hours while the irrigation system is activated. It will be necessary to reduce the pressure of the system and hold it at lower pressure.
14. A CVWD cross-connection specialist and the Recycled Water On-site supervisor will inspect pressure recorders for any spikes for the first hour.
15. If any spikes exist, both CVWD's cross-connection specialist and the on-site recycled water supervisor will investigate the cause of the spike and determine if a cross-connection exists.
16. If no cross-connection exists, the pressure recorders are removed.

17. The results of the cross-connection control initial test are sent to the Division of Drinking Water. Upon approval, the Division of Drinking Water sends an approval letter to the customer, CVWD and the Regional Water Quality Control Board.

For Dual-Plumbed Sites:

Part 1: Cross-Connection Test Procedures on the Nonpotable Water Irrigation System

Objective: To locate possible cross-connections between the domestic water facilities and the nonpotable water irrigation distribution system.

Procedures:

1. Irrigation system will be activated by the Cotino Mutual Water Company to check for overspray, failing nozzles, misdirected spray heads, and runoff.
2. Verification that there are no gardens, herb gardens, water fountains, pools, and/or spas supplied by the irrigation system.
3. Verification that if a pool and/or spa exists there is a definitive barrier that is 3-4' away from irrigation appurtenances.
4. Ensure that all above ground appurtenances on the irrigation system are purple and valve box covers are also purple and there is an internal tag.
5. Verify that there have been no unapproved changes to the irrigation system.
6. The nonpotable water irrigation system is pressurized.
7. During the time that the nonpotable water irrigation system is operating, the domestic water system will be off for annual backflow test.
8. Water Quality samples will be collected from the irrigation system and tested for chlorine residual and electrical conductivity.
9. If no cross-connection exists, then the investigation will continue with Part 2.
10. During part 2, the irrigation system will be shutdown briefly for cross-verification when the domestic water system is restored and a flow/no flow test will be conducted on the irrigation system.

Part 2: Cross-Connection Test Procedures on the Domestic Water Facilities

Objective: To locate possible cross-connections between the domestic water facilities and the nonpotable water irrigation distribution system.

Procedures:

1. The domestic water service will be shut off, and an annual backflow test will be conducted.

2. A flow/no flow test will be conducted at hose bibs on the domestic water system during the backflow test and while the nonpotable water irrigation system is active.
3. Upon completion of the irrigation system tests, the irrigation system will be turned off.
4. Upon completion of the annual backflow test, the domestic water system will be restored.
5. The domestic water irrigation system is pressurized.
6. Water Quality samples will be collected from the domestic water system and tested for chlorine residual and electrical conductivity.
7. A flow/no flow test will be conducted at hose bibs on the irrigation system while the irrigation system is turned off.
8. Verify that there have been no unapproved changes to the domestic water system.
9. If no cross-connection exists, then the investigation is completed, and the irrigation system will be restored.

SECTION G SAMPLE FORMS AND SITE-SPECIFIC DETAILS

SUMMARY OF STEPS TO OBTAIN RECYCLED WATER

- Customers interested in the use of nonpotable water, including recycled water, shall sign a Nonpotable Water Agreement and a Recycled Water Permit.
- When a site has been approved for the use of recycled water, per the Health and Safety Code, Division 104, Part 12, Chapter 5, Article 2, §116815. Purple pipe for recycled water (a) All pipes installed above or below the ground, on and after June 1, 1993, that are designed to carry recycled water, shall be colored purple or distinctively wrapped with purple tape.
- Nonpotable Water is considered an interruptible supply of water. Nonpotable Water customers must have a backup water supply that is in “ready” status and is capable of working in tandem with the nonpotable water being supplied by CVWD. The backup water supply is typically groundwater produced by a privately owned well or produced as a domestic water supply by a well owned by CVWD. The backup water shall be metered.

- Recycled water users must comply with all local, county, state and federal health regulations, including CVWD’s Recycled Water Ordinance. Cross connection control shall require an appropriately sized air gap system or a reduced pressure backflow device. All irrigation systems shall be tested for potential cross-connections before being put into service.
- Sites using recycled water are not exempted from the Maximum Applied Water Allowance (MAWA), prescribed water audits or the provisions of these design criteria.
- A Recycled Water Checklist shall be submitted to the District upon submittal of the first plan check of the landscape design plan and the irrigation design plan.
-
- Potential customers must have irrigation plans stamped by a registered landscape architect or a registered civil engineer.
- Landscape and Irrigation system plans must meet regulatory requirements of CVWD’s Recycled Water Ordinance, CVWD’s Landscape and Irrigation System Design Criteria Ordinance, the Nonpotable Water Agreement, The State Board’s Recycled Water Policy, and California Department of Public Health (CDPH) Statutes and Regulations related to recycled water, such as the Health and Safety Code, the Water Code, Title 22 Code of Regulations, and the State Water Resource Control Board Order WQ 2016-0068-DDW. The plans must be submitted to CVWD for review and approval. These requirements include but are not limited to the following:
 - i. An air-gap separation, a vertically measured distance between supply pipe and receiving vessel must be present and meet the required distance for the size of the supply pipe.
 - ii. The appropriate type of backflow protection is to be installed for auxiliary water supplies and recycled water.
 - iii. The required separation distance between recycled water lines and impoundments and application area; and domestic wells and water lines is maintained.
 - iv. The design of the irrigation system shall not cause the occurrence of ponding anywhere in the reuse area, and overspray or mist around dwellings, outdoor eating areas and/or food handling facilities is eliminated. Irrigation runoff shall be confined to the recycled water use area unless authorized by CVWD.
 - v. Drinking fountains will be protected from spray, mist or runoff by use of a drinking fountain cover or shelter approved for this purpose.

- vi. Hose bibs are not allowed on portions of the recycled water systems accessible to the general public. Quick couplers that differ from those used on the potable water system are allowed.
 - vii. Signs are posted in areas that the public has access to that are no less than 4 inches high by 8 inches wide and include “RECYCLED WATER—DO NOT DRINK” and the international do not drink symbol as indicated in CCR Title 22 Division 4 Chapter 3 Article 4 Section as figure 60310-A. The number and locations of these signs will be approved by Division of Drinking Water.
 - viii. The recycled water irrigation system is able to be operated during a time of day that will minimize contact with the public.
 - ix. All pipes installed above or below ground on or after June 1, 1993, designed to carry recycled water are to be colored purple or wrapped in purple tape.
 - x. Pump houses utilizing recycled water are appropriately tagged with warning signs with proper wording of sufficient size to warn the public that recycled water is not safe for drinking. All new and replacement at grade valve boxes shall be purple or appropriately tagged for water reuse purposes. All other appurtenances and equipment used for recycled water must be identified as used for recycled water distribution per the recommendations of Division of Drinking Water.
- An initial cross-connection test is to be conducted on existing systems by CVWD and the appropriate regulatory agency representatives.
 - Approvals for deviations in the approved plans are to be sought as they occur.
 - All work during construction must be inspected by CVWD before backfilling any buried piping. If any recycled or potable water piping is installed before plan check approval and/or inspection, the pipeline is subject to rejection and may be required to have all or any portion of the pipeline to be exposed and corrected as necessary.
 - A follow up cross-connection control test will be performed on the irrigation and domestic systems, if necessary, prior to the discharge of recycled water and at least once every four years thereafter. This test is to be conducted by CVWD’s cross-connection control specialist. The results of these tests are to be submitted to the Division of Drinking Water within 30 days of test completion for initial tests and follow-up dual-plumbed tests.

- Upon approval from the Regional Board and Division of Drinking Water the discharger shall provide notification that recycled water will be used for irrigation to people who reside adjacent to the recycled water use area and to golf course patrons through a method approved by the Regional Board's Executive Officer and Division of Drinking Water at least 30 days prior to use of recycled water.
- A Recycled Water Use Site Supervisor must be designated and his or her name and contact information must be provided in writing to CVWD 30 days prior to discharge of recycled water. This person will be available to be contacted and receive periodic education and training on the uses and restrictions of recycled water.
- "As-Built" plans and specifications showing the domestic and irrigation systems, location of all potable and recycled water connections and location of all on-site and nearby wells to CVWD.
- CVWD's Nonpotable Water Program Manager and/or Nonpotable Water Crew Chief will discuss with the customer and the customer's Recycled Water On-site Supervisor the responsibilities of the Recycled Water On-site Supervisor, cross-connection control tests, etc.

Indicate the type of physical separation? Air Gap Swivel ell Other Result of inspection: _____ (Pass or Fail)		Are there any hose bibs supplying recycled water? YES NO Do RW quick couplers differ from potable couplers? YES NO					
Were there any observations of overspray, runoff water, and/or ponding observed? YES NO If so, where? _____ Is runoff confined to use area? YES NO Is runoff authorized by DDW? YES NO		Are there any changes to the Booster pump since the last survey or test? YES NO If so, what changes have been made? _____ _____					
Have there been any upgrades or modifications to the irrigation piping system? If so, has the Division of Drinking Water been notified? Do these upgrades require a shutdown test to be performed? Are As-built plans available? If so, please obtain a copy of these plans.		YES YES YES YES	NO NO NO NO				
Are the drinking fountains protected from irrigation overspray, mist, runoff? If so, how are they protected (wall, bowl, hedge)? _____ Have any new drinking fountains been added? If so, where? _____		YES YES	NO NO				
Drinking fountain, food handling, food storage or dining areas being affected? Is there a domestic water well on-site? Is recycled water irrigated within 50' of well or stored within 100' of the well?		YES YES YES	NO NO NO				
Cross Connection Shutdown test is required at least once every four years. Last test date: _____. The next shutdown test will be due in 20____.							
Quarterly Observations to be reported annually for WQ-2016-0068-DDW							
Soil Saturation or Ponding		Nuisance Odors/Vectors		Discharge Off-Site		Notification Signs	
YES	NO	YES	NO	YES	NO	YES	NO
Notes:							
Observed by (Cross-Connection Specialist):				Title:		Agency:	
_____				_____		_____	
Print Sign							
Observed by (On-site Supervisor):				Title:		Agency:	
_____				_____		_____	
Print Sign							
Approved by (CVWD Supervisor):				Title:		Date:	
_____				_____		_____	

SECTION H LOCAL GOVERNING AGENCIES

Coachella Valley Water District

P.O. Box 1058
85-995 Avenue 52
Coachella, CA 92236
(760) 398-2651

Regional Water Quality Control Board

Colorado River Basin Region
Water Quality Control Board
73-720 Fred Waring Dr., Ste 100
Palm Desert, CA 92260
(760) 776-8974

California Department of Health Services

Southern California Drinking Water Field Operations Branch
Division of Drinking Water
State Water Resources Control Board
2375 Northside Drive, Suite 100
San Diego, CA 92108-2700
(619) 525-4408

State of California Department of Health Services

California Department of Health Services
P.O. Box 997413
Sacramento, CA 95899-7413
(916) 558-1784

SECTION I DEFINITIONS

Whenever the following terms, or pronouns used in their place, occur in this Manual the intent and meaning shall be interpreted as follows:

Air Gap Separation – a physical vertical separation of at least two (2) times the effective opening, as defined in section 207.0 of the California Plumbing Code, between the free-flowing discharge end of a potable water supply pipeline and the flood level of an open or non-pressurized receiving vessel, and in no case less than one (1) inch.

Approved Backflow Prevention Assembly – a mechanical assembly designed and constructed to prevent backflow, such that while in-line it can be maintained and its ability to prevent backflow, as designed, can be field tested, inspected and evaluated.

Approved Use – An application of recycled water in a manner, and for a purpose, designed in a Nonpotable Water Agreement and Recycled Water Permit issued by CVWD and in compliance with all applicable Regulatory Agency requirements.

Approved Use Area – A site with well-defined boundaries, designated in a Nonpotable Water Agreement and Recycled Water Permit issued by CVWD to receive recycled water for an approved use and acknowledged by all applicable Regulatory Agencies.

Coachella Valley Water District (CVWD) – The local purveyor or producer of recycled water for the specified service area.

Cross-Connection – any actual or potential connection or structural arrangement between a public water system, including a piping system connected to the public water system and located on the premises of a water user or available to the water user, and any source or distribution system containing liquid, gas, or other substances not from an approved water supply.

Customer – Any person, persons or organization (including, but not limited to, any private company or corporation, public utility, municipality or other public body or institution) issued a general waste discharge requirement for discharge of recycled water for golf course and landscape irrigation permit by the Regional Water Quality Control Board and has signed a Nonpotable Water Agreement with CVWD. The customer and Owner may be the same.

Infiltration Rate – The rate at which the soil will accept water as applied during irrigation, expressed in inches per hour.

Local City or County Health Department – This agency is the local health protection agency for the municipality in question.

Nonpotable Water – The water that has not been treated for human consumption in conformance with the latest edition of the United States Environmental Protection Agency's Drinking Water Standards, the California Safe Drinking Water Act, or any other applicable standards. This also refers to irrigation or industrial process water

derived from a potable water system through an approved backflow prevention device that may be subject to contamination (e.g., through back-siphonage).

Off-site – Designates or relates to recycled water facilities up to and including the water meter that are owned and operated by CVWD.

On-site – Designates or relates to facilities owned and operated by a customer.

Operations Personnel – Any employee of a customer, whether permanent or temporary, or any contracted worker who's regular or assigned work involves the supervision, operation or maintenance of equipment on any portion of on-site facilities using recycled water.

Owner – Any holder of legal title, contract purchaser, or lessee under a lease with an unexpired term of more than one (1) year, for property for which recycled water service has been requested or established.

Point of Connection – This is the point where the customer's system ties to CVWD's system, usually at the water meter.

Ponding – Unintentional retention of recycled water on the surface of the ground or other natural or manmade surface for a period following the cessation of an approved recycled water use activity such that a hazard or potential hazard to the public health results.

Potable Water – That water that is pure and wholesome, deemed safe for consumption, cleaning, cooking, and bathing, does not endanger the lives or health of human beings, and conforms to the latest edition of the California Safe Drinking Water Act, or other applicable standards.

Public – Any person or persons at large who may come in contact with facilities and/or areas where recycled water is approved for use.

Rate and Fee Schedule – The schedule of all rates, charges, fees and assessments to be made concerning the use of recycled water served by CVWD as approved or as amended by CVWD.

Recycled Water – Nonpotable water that is highly treated to the California Code of Regulations, Title 22, Chapter 3 and used for approved purposes other than drinking water.

Nonpotable Water Agreement – An agreement issued by CVWD to a recycled water service customer to indicate how CVWD will deliver recycled water and how the customer will discharge recycled water. This bilateral service agreement between the Customer and CVWD legally binds the parties to all conditions stated in the Agreement and all rules and regulations related to the use of recycled water.

Regulatory Agencies – Those public agencies legally constituted to protect the public health and water quality, such as the Division of Drinking Water, the California Regional Water Quality Control Board and the local city or county Health Department.

Runoff – When recycled water is intentionally or unintentionally allowed to drain outside the approved recycled water irrigation area.

Service – The furnishing of recycled water to a customer through a metered connection to the on-site facilities.

Swivel-Ell - a reduced pressure principle backflow prevention assembly combined with a changeover piping configuration (swivel-ell connection).

Recycled Water On-site Supervisor – A qualified person designated by the customer to provide liaison with CVWD. This person should be available to CVWD at all times, should have the knowledge and authority to carry out any requirements of the CVWD, and should be responsible for the installation, operation and maintenance of the recycled and potable water systems and also prevention of potential hazards.

Unauthorized Discharge – Any release or spill of recycled water that violates the rules and regulations of CVWD or all applicable Federal, State or local statutes, regulations, ordinances, contracts or other requirements.

Violation – Noncompliance with any condition or conditions of the Nonpotable Water Agreement, CVWD’s Recycled Water Ordinance, water recycling requirements issued the Regional Water Quality Control Board and/or Title 22, Chapter 3 of the California Code of Regulations by any person, action or occurrence, whether willfully or by accident.

Windblown Spray – Dispersed, airborne particles of recycled water that can be transmitted through the air to locations other than those approved for the direct use of recycled water.

SECTION J TIPS FOR SUCCESSFUL USAGE

The recycled water that is delivered for beneficial reuse has been “manufactured” at a water reclamation plant, resulting in a quality that meets very strict regulatory standards for safety. It is virtually impossible to distinguish the recycled water, as described in this Manual, from potable water supplies. However, there are general chemical differences that may require customers to make changes in their landscaping practices. The following few pages are not meant to be a comprehensive discussion of issues that might arise when irrigating with recycled water, but only the most common areas of concern.

SALT LEVELS

Salt is a difficult and expensive constituent to remove from water; consequently, it and other minerals that are not often removed by conventional treatment processes. The salinity, or salt levels in recycled water can vary from treatment plant to treatment plant but are generally higher than the local domestic water supply. Therefore, customers may

want to carefully consider their selection of plants, soil composition and irrigation practices.

Type of plants

For the most part, turf grass is very tolerant of higher salt levels, as are many ornamental trees and shrubs. Additionally, experience has shown that most flowering plants thrive with the use of recycled water. However, not all landscape plants are suitable for irrigation with recycled water. Most notable of these are azaleas, which are very salt **intolerant** and should be avoided when using recycled water.

Soil types

The type of soil present at a customer's site strongly influences how the salt in the recycled (or any) water affects plant growth and health. Well draining soil is preferable; however, any areas have a clay component in their soil. Clay tends to hold on to salt and can actually cause the soil to stop draining altogether. This particular phenomenon is the direct result of elevated levels of sodium and is measured by its ratio to calcium and magnesium (Sodium Adsorption Ratio, or SAR). The presence of self-regenerating water softeners that discharge sodium-laden brine into the sewer system are big contributors to elevated sodium levels in the recycled water.

Problems with soil drainage due to clay soils and an elevated SAR can be rectified by the application of gypsum (calcium), which loosens the bound-up clay and allows for water to drain through the soil. However, when dealing with clay soil drainage issues, some recycled water Customers have rejected gypsum as it increases the salinity and instead opted for an acid injection system. Buffered acid can be added to break up the bicarbonate binding and salt built up at the surface level in clay soils and allow improved penetration to the root zone.

Irrigation schedule

Depending on the levels of salt in the recycled water and the soil type (sand vs. clay), a switch to longer irrigation run times done on a less frequent basis may be called for. Short irrigation runs have the potential to deposit more salt in the root zone, with possible adverse impacts on plant health and growth. Clay soil is more susceptible to this phenomenon than better-draining soils. Heavier watering done less frequently leaches the accumulating salts out of the root zone. This is particularly important in regions of the state that don't experience sufficient precipitation during the rainy season. Rainfall can have the same effect as longer watering periods, if the rainstorms are heavy enough. Periods of drought can exacerbate the build-up of salts further but can be answered with a modified irrigation schedule.

NUTRIENTS

Recycled water may also contain higher nutrient levels such as nitrogen, phosphorous and potassium, which are essential components for plant growth. Some treatment processes may reduce the levels of these chemicals, although they are not totally removed.

Fertilizer Value

While nutrient levels vary among treatment plants, there are sufficient levels of nitrogen, phosphorous and potassium in the recycled water to provide fertilizer value to the landscaping each and every time irrigation takes place. Based on nutrient levels in the recycled water being supplied, a Recycled Water On-site Supervisor can readily calculate the number of pounds of each constituent being delivered. He or she can then determine how much, if any, and what kind of additional fertilizer needs to be applied. A common mistake is to continue the same fertilizer application schedule that was in place when domestic water was being used for irrigation. The addition of applied fertilizer, on top of the extra nutrients in the recycled water, can cause problems with plant health, groundwater quality problems and avoidable costs to the site in buying and using unnecessary fertilizer.

Ornamental Lakes

Some reuse sites have ornamental lakes as part of the landscaping. Care must be exercised if recycled water is used to supply these lakes. The nutrient value in the recycled water readily promotes the growth of algae, which can impair the aesthetics of these lakes. This is especially a problem in lakes that are less than 10 feet deep, due to sunlight penetration. Several different strategies have been employed at such lakes, with the greatest level of success in algae control coming from combinations of two or more of the following methods:

- Pumping the recycled water from the lake into the irrigation system reduces the amount of time the water (and the nutrients it contains) spends in the lake, consequently reducing algae production.
- Re-circulating the water by means of fountains or waterfalls or installing more extensive aeration systems.
- Preventing the introduction of organic material (such as grass clippings) from entering the lake.
- Stocking the lake with algae eating fish, such as Tilapia. However, some fish, like koi, react unfavorably to the higher ammonia levels that may be in the recycled water.
- Using a chemical product to prevent sunlight from penetrating the water column.
- Ensuring that the lake has a complete turn over in water use.

Increased Mowing

Reports from many turf sites using recycled water have reported the need to mow their grass more often. This is the direct result of the additional nutrients in the recycled water being available for uptake by the grass.

“On-Site” Supervisor Do’s and Don’ts

Do’s

- Do install and maintain signs at all points of entry (pedestrian and vehicular).
- Do install and maintain labels and tags on recycled and potable water systems.
- Do operate irrigation system between 10 p.m.–6 a.m. if automatically controlled (unless other restrictions apply) and at other times if manually controlled and supervised (someone present) to make sure the recycled water doesn’t come in contact with the public.
- Do use quick couplers instead of hose bibbs.
- Do contact “provider” if any water system (potable or recycled) modifications are anticipated.
- Do immediately contact water utility and/or recycled water producer if any of the following has occurred:
 - A recycled water line break, spill or off-site discharge of recycled water,
 - A violation of water recycling requirements, or
 - A cross-connection between the recycled and potable water systems.
- Do educate/train site workers on safe use and restrictions of recycled water.
- Do keep records and as-built drawings up-to-date and accessible.
- Do assist and cooperate during Periodic Visual Inspections.
- Do assist and cooperate during Periodic Cross-Connection Testing.

Don’ts

- Don’t drink recycled water.
- Don’t use recycled water to wash hands or any other part of body.
- Don’t remove recycled water identification signs, tags or labels.
- Don’t cross-connect two dissimilar water systems (recycled to potable).
- Don’t allow recycled water to contact drinking fountains or eating areas.
- Don’t allow recycled water to pond or puddle.
- Don’t allow recycled water to run off the use site property by either overspray or overwatering.
- Don’t use recycled water on an unapproved site.
- Don’t put hose bibbs on recycled water systems (unless public access is restricted).
- Don’t use the same equipment on both recycled water and domestic water systems (for example, quick couplers, tools, etc.).
- Don’t modify any water system without prior approval of provider and/or Division of Drinking Water.

Recycled Water Uses Allowed¹ in California

This summary is prepared for WaterReuse Association from the December 2, 2000-adopted Title 22 Water Recycling Criteria and supersedes all earlier versions.

Treatment Level

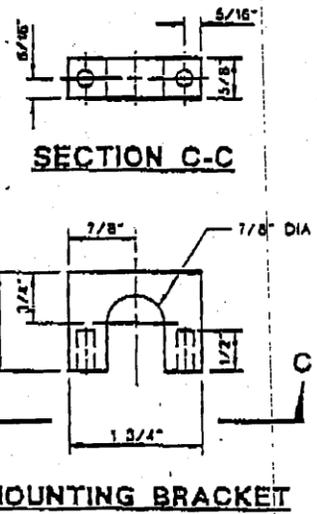
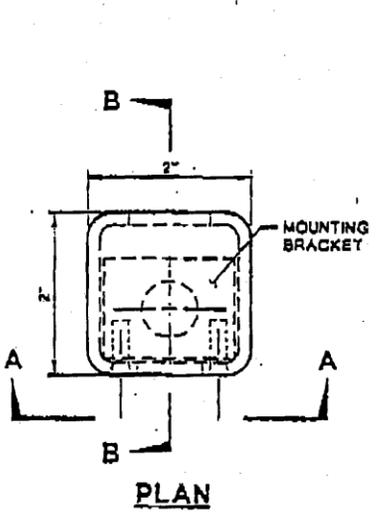
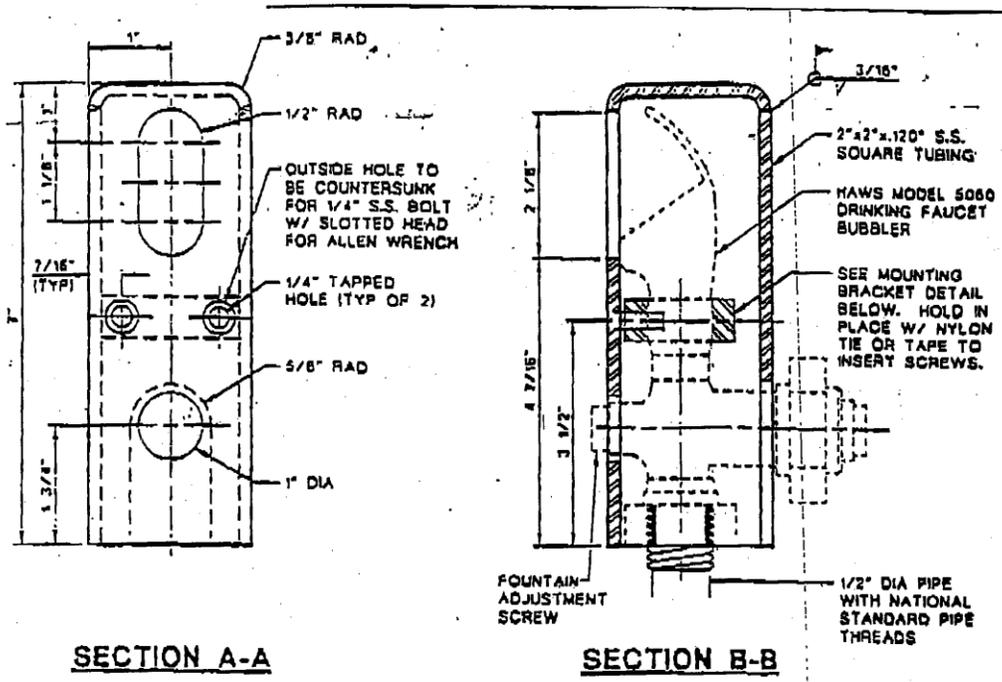
<i>Use of Recycled Water</i>	Disinfected Tertiary Recycled Water	Disinfected Secondary-2.2 Recycled Water	Disinfected Secondary-23 Recycled Water	Undisinfected Secondary Recycled Water
<i>Irrigation of:</i>				
Food crops where recycled water contacts the edible portion of the crop, including all root 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 the California Code of Regulations	Allowed	Not allowed	Not allowed	Not allowed
Food crops, surface-irrigated, above-ground edible portion, 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 with unrestricted public access	Allowed	Allowed	Allowed	Not allowed
Pasture for milk animals for human consumption	Allowed	Allowed	Allowed	Not allowed
Nonedible vegetation with access control to prevent use as a park, playground or school yard	Allowed	Allowed	Allowed	Not allowed
Orchards with no contact between edible portion and recycled water	Allowed	Allowed	Allowed	Allowed
Vineyards with no contact between edible portion and recycled water	Allowed	Allowed	Allowed	Allowed
Non food-bearing trees, including Christmas trees not irrigated less than 14 days before harvest	Allowed	Allowed	Allowed	Allowed
Fodder and fiber crops and pasture for animals not producing milk for human consumption	Allowed	Allowed	Allowed	Allowed
Seed crops not eaten by humans	Allowed	Allowed	Allowed	Allowed
Food crops undergoing commercial pathogen-destroying processing before consumption by humans	Allowed	Allowed	Allowed	Allowed
<i>Supply for impoundment:</i>				
Nonrestricted 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
<i>Supply for cooling or air conditioning:</i>				
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 cooling tower, evaporative condenser, or spraying that creates a mist	Allowed	Allowed	Allowed	Not allowed
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Recycled Water Uses Allowed¹ in California

This summary is prepared for WaterReuse Association from the December 2, 2000-adopted Title 22 Water Recycling Criteria and supersedes all earlier versions.

Treatment Level				
<i>Use of Recycled Water</i>	Disinfected Tertiary Recycled Water	Disinfected Secondary-2.2 Recycled Water	Disinfected Secondary-23 Recycled Water	Undisinfected Secondary Recycled Water
Other uses:				
Groundwater Recharge	Allowed under special case-by-case permits by RWQCBs ⁴			
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
Commercial car washes, not heating the water, excluding the general public from washing process	Allowed	Not allowed	Not allowed	Not allowed
Industrial process water that will not come into contact with workers	Allowed	Allowed	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



NOTE: ALL COMPONENTS SHALL BE TYPE 316 S.S.

DRINKING FOUNTAIN COVER DETAIL

9/92 NOT TO SCALE