



## **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 “On-site Supervisor” 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. It’s the responsibility of the Customer to check with CVWD before initiating any operational or physical changes to the use site’s irrigation 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.

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- **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,” (also called “reclaimed water”) as used in this Manual and defined in Title 22, Chapter 3 of the California Code of Regulations, refers to disinfected tertiary recycled water produced from the three-stage treatment of municipal wastewater. (Although disinfected secondary recycled water may also be reused, its applications are limited and subject to additional conditions, and it will not be addressed in this Manual.)

The facilities that produce recycled water are known as Water Recycling (or Reclamation) Plants that are owned and operated by “Recycled Water Producers.” The recycled water produced by these plants is delivered to Customers through distribution systems owned and operated by “Recycled Water Agencies.” Recycled Water Producers and Agencies can be one and the same entity, such as CVWD.

The appearance of recycled water is virtually identical to domestic water. Recycled water produced by CVWD meets State criteria for full-body human contact but is **not** approved for direct human consumption. The sensible use of recycled water affords an excellent choice for essentially all non-potable applications. Properly managed, recycled water is safe to use.

### CVWD WATER RECLAMATION PLANTS

CVWD owns and operates three water reclamation plants (WRPs) that treat and deliver recycled water. WRP10 is located off of Cook Street in Palm Desert and serves a blend of canal water and disinfected tertiary recycled water to 12 golf courses, 4 home owner’s associations, and 1 high school in the Palm Desert area. This facility is also the delivery destination for Mid-Valley Pipeline water. The Mid-Valley Pipeline Project upon completion will serve approximately 30 to 40 additional golf courses with blended canal water and tertiary water. WRP10 has been serving recycled water since 1987. WRP7 is located off of Avenue 38 and serves a blend of canal water and disinfected tertiary recycled water to 3 golf courses in the Indio Hills area. WRP7 has been serving recycled water since 1997. WRP9 is located off of Elkhorn Trail and serves disinfected secondary recycled water to portions of five holes on golf courses in the Palm Desert area. WRP9 has been serving secondary recycled water since 1968.



### **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 the wastewater provide food for trillions of microorganisms. While these microorganisms are busy consuming the organic waste, the aeration basin provides dissolved oxygen to help keep the microorganisms alive.

The microorganisms and treated organic waste, now considered to be activated sludge, settles to the bottom of a clarification tank. The sludge is pumped from the bottom of the clarification tank to a DAF (dissolved air floatation), which removes some of the water and thickens the sludge. It 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 disinfected with chlorine to comply with State requirements. 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. Also, the costs of potable water supplies continue to climb, 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-treated recycled water can be used for virtually all non-potable applications (See page 45 for the water reuse association's list of recycled water uses allowed in California). Recycled water also contains a beneficial nutrient content, such as nitrogen, potassium, phosphorus, calcium, magnesium, sulfur, and other macro and micronutrients, which provide fertilization during the irrigation process. A full recycled water quality analysis can be obtained from CVWD and tips are provided in Section J of this manual to help Customers realize the full benefits of recycled water. Irrigating with recycled water is making use of a valuable resource that would otherwise be disposed.



## **NEED FOR REGULATIONS**

Regulations make the use of recycled water possible. Regulations ensure consistent, reliable water quality while being fully protective of the public health. California Code of Regulations Titles 22 and 17 are the two sets of California Department of Public Health (CDPH) regulations that accomplish this. Title 22 establishes the requirements for recycled water treatment, quality and allowable use. Title 17 establishes the requirements for backflow protection of the potable water supply. Title 22 and 17 regulations can be found in the Statutes and Regulations which contains all of the California Health laws related to recycled water and are located at

<http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Lawbook/RWstatutes-01-2009-rev.pdf>

<http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Lawbook/RWregulations-01-2009.pdf>

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Recycled water is a safe and effective resource for nonpotable use when properly managed. To help in the proper management of recycled water, State of California agencies have developed rules and regulations for the safe use of recycled water. These rules and regulations are used to manage the risks associated with the use of recycled water and are protective of the Customer, its 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 (Design Approval, page 9).
- The recycled water system must be operated under the authority of a "Nonpotable Water Agreement" (page 8) that outlines any special considerations or requirements for the particular use site.
- The Customer must designate an "On-site Supervisor" (page 13) who is responsible for managing the on-site water system. The On-site Supervisor ensures the system is operated within the established guidelines and is properly maintained (Maintenance, page 17).
- In cooperation with the Customer, CVWD will make regular inspections of the site (Periodic Site Inspections, page 18).
- The Customer must instruct all persons using recycled water of its proper use and precautions (Personnel Training, page 14).
- All piping and points of connection must be labeled with "Recycled Water -- Do Not Drink" (Marking and Equipment, page 20) and the universal "Do Not Drink" symbol (page 26).
- 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" (page 24) and the "Do Not Drink" symbol (page 26).
- 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 (Initial Cross-Connection Test, page 27).
- Prior to connection with the recycled water distribution system, a final cross-connection test must be performed to verify that construction or retrofit work was performed correctly (Final Cross-Connection Test, page 27).

- In the event of a cross-connection incident, the Customer must implement an emergency response plan (page 28).

### **REGULATORY AUTHORITY**

Rules and regulations for the end use of recycled water are established and/or enforced by the California Regional Water Quality Control Board (Regional Board) and CDPH. These rules and regulations are typically contained in a permit from the Regional Board issued to CVWD for the wastewater treatment plants and to the Customers for discharging recycled water for golf course and landscape irrigation. For the Colorado River Basin Region, Board Order 97-700 is the general waste discharge permit for discharge of recycled water for golf course and landscape irrigation and can be found on the following website: <http://www.waterboards.ca.gov/coloradoriver/>.

All facilities using recycled water must be designed and operated to meet the standards of the local governing codes, rules and regulations. Various regulations for recycled water use may be outlined in Board Order 97-700. 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.

On February 3, 2009, the State Water Resources Control Board (State Board) adopted a Recycled Water Policy (Policy) for California. This Policy provides guidance to the Regional Boards throughout the State for implementing recycled water use requirements. The State Board hopes the Policy will remove some of the regulatory uncertainty that currently exists in some Regional Boards and provide a more consistent State-wide approach for regulating the use of recycled water. In addition to new goals for increasing recycled water use in California, this Policy includes additional requirements related to nutrient and salt management that may be incorporated into future permits governing recycled water use in the Coachella Valley. CVWD staff is monitoring Regional Board staff efforts to implement this Policy and will make every effort to inform the Customer of any new requirements when they are proposed.

### **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 to 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

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AWWA California-Nevada Section's Guidelines for the On-site Retrofit of Facilities Using Disinfected Tertiary Recycled Water.

- Obtaining and complying with all discharge 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 (for example, completing discharge permit application process) 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.

### **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 THE ENVIRONMENT AND 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 environment and public health.

### **AUTHORIZED USES**

The use of recycled water is limited to those uses approved by the Regional Board or the CDPH. 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 use areas identified in the recycled water use plans submitted to CVWD and approved by the Regional Board, following the Customer's completion of CVWD's application procedure and its meeting all of the requirements of the applicable Regulatory Agencies.

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 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.

### **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 (*Enforcement*, page 19).

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. CVWD may supply water to the affected area either temporarily or permanently from the potable water system with appropriate backflow protection (*Protection of Potable Water Systems*, page 27 and *Back-up Water Source*, page 11).

## **SECTION B DESIGN & CONSTRUCTION**

### **DESIGN APPROVAL**

Before the construction of any new or major modifications of an existing recycled water system, please refer to Ordinance No. 1302.1 for Landscape and Irrigation System Design Criteria and the CVWD Development Design Manual. The development design must be submitted to CVWD and approved by the Regional Board and CDPH. CVWD approval will be contingent upon evidence that all applicable design requirements, rules and regulations for a recycled water system are satisfied and receipt of payment of all costs associated with the review and approval process. 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 regulatory agencies or their 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.

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 or ponding or windblown spray, especially on slopes of recycled water must be corrected.

Spray patterns must be checked to make sure recycled water does not come in contact with drinking water fountains, food handling, food storage or dining areas. 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 that agency's recycled 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

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recycled water shall be described in the design plans and specifications submitted for approval by CVWD, Regional Board and CDPH.

To ensure that the quality of the recycled water in CVWD's recycled water distribution system is not compromised by any Customer, CVWD may require backflow protection on the Customer's recycled water system. 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 chemical 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 must be properly maintained, inspected quarterly and tested at least annually. Backflow prevention assemblies, when required on recycled water systems, must be conspicuously labeled. Based on the provisions of the Nonpotable Water Agreement, CVWD may provide the required test equipment.

### **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 Regional Board and CDPH. CDPH permits the use of a "swivel-ell" assembly (see sample schematic, next page) 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.

### **FIRE PROTECTION SYSTEMS**

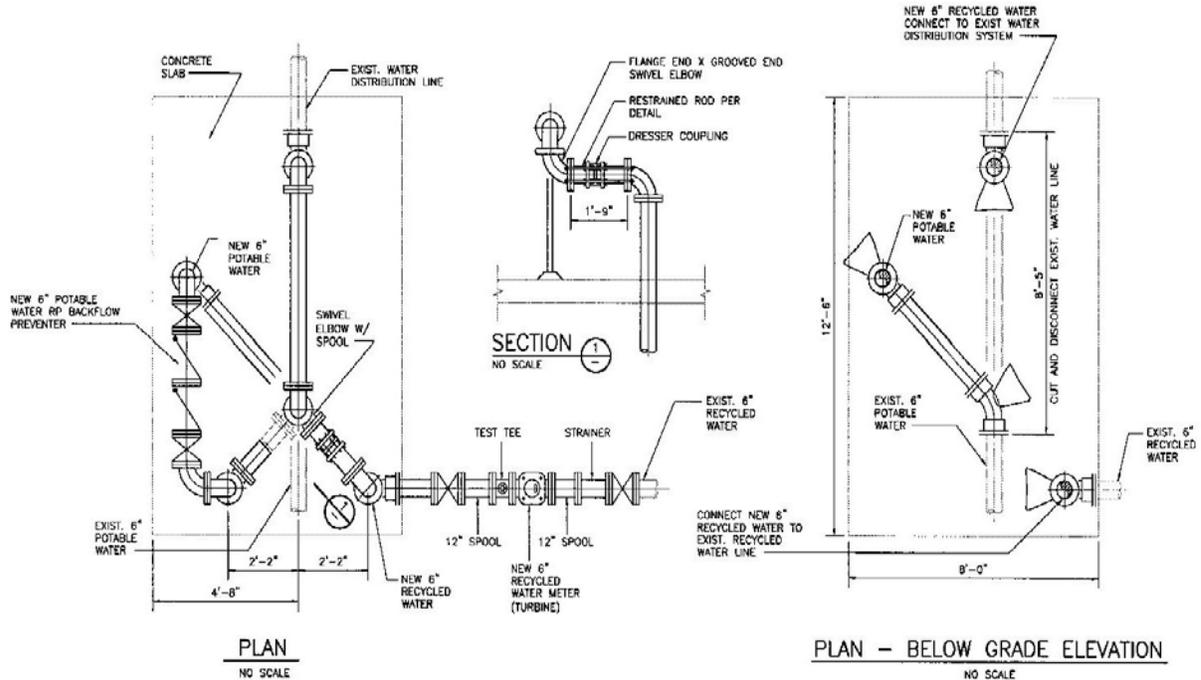
Some recycled water use sites may also have separate potable water service connections for dedicated fire protection systems or fire protection systems that use recycled water. An approved backflow prevention device that meets Title 17 requirements for the type of fire protection system in use will be required. Since requirements vary from place to place, the exact requirements will be provided to the Customer by CVWD and State regulatory agencies.

### **PROTECTION OF GROUNDWATER**

Irrigation with recycled water within 50 feet or impoundment of recycled water within 100 feet of any domestic well is prohibited, unless otherwise approved by CDPH. 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.



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

**SECTION C OPERATION & MAINTENANCE**

**GENERAL**

Recycled water service will be provided by CVWD only to those Customers who have a current Nonpotable Water Agreement 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 Titles 17 and 22, and requirements and regulations imposed by the Regional Board, CDPH and/or the recycled water Producer. 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**

Recycled water irrigation systems shall be designed, constructed and operated using best management practices that minimize runoff of recycled water outside the approved use area. The intentional discharge of recycled water to land not owned or operated by the discharger is prohibited. Recycled water spray, mist or runoff shall not enter dwellings, designated outdoor eating areas or food handling facilities.

### **Ponding Conditions**

The irrigation systems must be designed, constructed and operated to minimize ponding within irrigated areas. This does not apply to approved impoundments such as golf course water hazards or decorative lakes.

### **Unapproved Uses**

Use of recycled water for any purposes other than those explicitly described in Board Order 97-700 recycled water discharge permit is strictly prohibited. Recycled water shall not be used as a domestic water supply or intentionally used as an animal water supply.

### **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 California Code of Regulations, 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 a potential cross-connection is discovered, the Customer shall immediately turn off the system, notify CVWD and implement the *Emergency Cross-Connection Response Plan* (see page 28).

## **DESIGNATION OF 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, an On-site Supervisor to be the contact person with CVWD.

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

- Receive training or be able to demonstrate knowledge of the application and maintenance of a recycled water system.
- Maintain a comprehensive understanding of the prohibitions, specifications and provisions included in Order No. 97-700.

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- Be aware of, and familiar with, this Manual.
- Be available to CVWD at all times and have the authority to carry out requirements governing the safe use of recycled water.
- Be responsible for the installation, operation and maintenance of the recycled and potable water systems, and for the prevention of potential hazards.
- 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 Titles 17 and 22 of the California Code of Regulations 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.
- 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 participate in any cross-connection tests.

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

### **PERSONNEL TRAINING**

All new employees at the recycled water use site must be trained in the proper use of recycled water by the On-site Supervisor. Supervisory personnel and the 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:

- Operations personnel must be aware that recycled water, although highly treated, is non-potable. **Recycled water may never be used for human consumption.**
- Operations personnel must understand that working with recycled water is safe if common sense is used and appropriate rules are followed.

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- Operations personnel must understand that conditions such as ponding, overspray and runoff of recycled water are not allowed and should be corrected immediately.
- Good personal hygiene must be followed (for example, washing hands after working with recycled water).
- Operations personnel must understand where the recycled water and domestic water pipelines are located and that there is never to be a direct connection between the recycled water system and the potable water system.
- Operations personnel must understand that adequate measures shall be taken to minimize public contact with recycled water.



*Operation of the recycled water irrigation system shall be supervised to minimize public contact with recycled water.*

### **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 (page 22).

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 approved by the regulatory agencies), along with the “Do Not Drink” symbol (page 26). Workers in these areas shall 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. (CDPH approved drinking fountain cover on page 47).



*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 don’t result in a modifications to the as-built form of either the recycled or potable water systems, or any agreed to operating plans, do not need prior approval by CVWD or regulatory agencies. Prior to modifying the existing recycled water system or constructing new recycled water facilities, the Customer shall obtain approval from CVWD and the regulatory agencies. This includes modifications to the approved plans or to an operational system. Detailed plans of any modifications to these plans should be submitted to and approved by CVWD, CDPH and the Regional Board in accordance with Order No. 97-700 and the modifications inspected by CVWD before their 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* (page 18).

## **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 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 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**

Annual 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 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 35) is to be signed and dated by both the On-site Supervisor and the CVWD employee performing the inspection. The original form should be kept by the inspecting entity with copies going to the On-site Supervisor, CVWD and/or Producer and any required regulatory agency. Should a cross-connection be discovered during the inspection, the *Emergency Cross-Connection Response Plan* (page 28) should be immediately invoked by the On-site Supervisor.

## **EMERGENCY PROCEDURES**

In case of a major earthquake, the On-site Supervisor should immediately inspect the potable and recycled water irrigation systems for damage. If either system appears damaged, both water sources for the irrigation systems should be shut off at their points of connection. The 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 file a written report.

### **Unauthorized Discharge**

It's the responsibility of the Customer to report to the California Office of Emergency Services and the Regional Board any spill incident that endangers human health or the environment in accordance with Order No. 97-700. Section 13529.2 of the California Water Code specifies that any unauthorized discharge of more than 50,000 gallons of disinfected tertiary recycled water (or 1,000 gallons for any lesser quality recycled water) in or on waters of the State shall be reported to the Regional Board. An immediate oral report followed by a written report is required.

### **Contamination of Drinking Water**

In case of contamination of the potable water system due to a cross-connection on the Customer's premises, CVWD, CDPH and the local county Health Department must be

immediately notified (see page 28). The Customer is to immediately invoke the *Emergency Cross-Connection Response Plan*.

## **VIOLATIONS**

CVWD reserves the right to determine and report to the CDPH and the Regional Board if a violation of the conditions under which the Customer Agreement was issued 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 On-site Supervisor to immediately notify CVWD of any failure or 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 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 whether a violation has occurred, it is the responsibility of the On-site Supervisor to report each occurrence to CVWD so a decision can be made. CVWD will assist the Customer in complying with requirements to notify 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 the Regional Board, CDPH and CVWD to decide if a violation has been adequately corrected.

## **ENFORCEMENT**

The State and/or Regional Board 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 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 CDPH. Deviations will not be allowed without prior approval.

System installation must conform to the Uniform Plumbing Code and all other local codes, rules and regulations. 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 (page 26) 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 at 10-foot intervals atop all horizontal piping, laterals and mains is an acceptable alternative to the purple 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 Non-Potable Water Lines**

Non-potable water is water supplied from the non-potable water delivery system through an appropriate backflow preventer. 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 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) to the extent feasible.

### **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 non-potable 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 non-potable water pipelines. Potable water pipelines may be wrapped with blue identification tape having the words “**POTABLE WATER**” visible in contrasting white letters.

Above-grade non-potable water pipelines must be appropriately labeled and color-coded yellow to differentiate non-potable water lines from recycled water and potable water lines. Non-potable water lines may be wrapped with yellow identification tape having the words “**NON-POTABLE 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 (page 26).

### **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 (page 26) 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 separated from domestic water wells and reservoirs by 100 feet or more unless approved otherwise by CDPH.

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, non-potable 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 (page 26) must be present.

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

## **VEHICLE IDENTIFICATION**

Any vehicle used to transport recycled water must be clearly marked with labels or signs that contain the words “**RECYCLED WATER -- DO NOT DRINK**” in black 2-inch high letters on a purple background and include the “Do Not Drink” symbol (page 27). One label or sign should be placed on the tank closest to the driver’s door, with a second label or sign being placed on the rear surface of the tank at the outlet. All labels and signs must be placed where they can easily be seen by the personnel using the vehicle. Any vehicle used for the transportation or storage of recycled water must not be reused for the transportation or storage of potable water, unless it has been flushed, disinfected and tested.

## **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 (page 26) 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.



*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 accidental cross-connections. In lieu of an air-gap, reduced-pressure principal backflow prevention (RP) devices are generally approved by the CDPH 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 device testing must be done by a backflow prevention device tester certified by the ABPA or the AWWA. Test reports must be provided to CVWD and the regulatory agency requiring the test. Records must be maintained for at least three (3) years by both the Customer and CVWD.

### INITIAL CROSS-CONNECTION TEST

In accordance with Order No. 97-700, Customers are responsible for completing initial and routine cross-connection testing to ensure no interconnection between the potable and recycled water irrigation system exists. Prior to retrofit work or construction, an initial cross-connection inspection and test must be coordinated by CVWD, with all appropriate health agencies being notified. This test should follow the general guidelines outlined in Section F. The purpose of the test is to determine if there are any connections between the existing irrigation system and the potable water system prior to construction. During the lifetime of the recycled water system, CVWD will periodically inspect the recycled water system to assist the Customer to ensure compliance with all applicable rules and regulations. Additionally, CVWD will assist the Customer by completing periodic inspections of the system for cross-connections (including shut-down tests, when appropriate), depending on the use site characteristics.

### FINAL CROSS-CONNECTION TEST

On sites where both recycled and potable water are present, a cross-connection test must be performed using potable water supplied through an approved backflow prevention device before connecting the Customer’s on-site recycled water system to CVWD’s distribution system. 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 test results must be submitted to the CDPH 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 a 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. 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.

Electrical conductivity 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)**

In accordance with Order No. 97-700, periodic cross-connection control shutdown testing must be done at least once every four (4) years, 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 local city or county Health Department, will make the determination when an unscheduled test is required. This test must follow the same procedures use for the cross-connection control test (either shut-down or dye test).

Before the test is performed, there needs to be coordination between CVWD, representatives of the CDPH, On-site Supervisor, and any other required regulatory agency. CVWD will assist the Customer by coordinating the scheduling of the test. Written verification of the test results will be provided by CVWD to the On-site Supervisor, CDPH and any other required regulatory agency. The Customer must comply with all provisions of Title 17, Chapter 5, Section 7601 of the Code of Regulations, concerning protection of drinking water systems against cross-connections and backflow.

### **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. CVWD will notify the health department.

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4. CVWD will collect water samples from the potable water system and perform a 24-hour bacteriological analysis (in consultation with California Department of Public Health). Water samples will be collected from the closest possible point to the cross-connection.
5. Identify the cause and location(s) of backflow and eliminate the cross-connection(s).
6. CVWD will conduct a cross-connection test in coordination with the appropriate health departments to verify that all cross-connections have been eliminated.
7. Obtain approval from CVWD and the local city or county health department before returning the recycled water system to service.
8. If the bacteriological analysis conducted in Step 4 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 Department of Public Health 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 or local county health department before removing signs.

## SECTION F REUSE SITE PRESSURE-TESTING PROCEDURE

The following are general guidelines for the testing procedure and may be modified upon request or with the approval of the State, local city or county Health Department:

1. Pressure recorders will be installed throughout the golf course irrigation system. The pressure recorders will be installed and activated approximately one hour prior to depressurizing the irrigation system.
2. The irrigation supply will be shut off, and since the domestic water supply pressure is close to the irrigation system pressure it will be necessary to first reduce the irrigation system to approximately 60 psi.
3. The irrigation system will be left off during the day for approximately four hours. During this time, a CVWD cross-connection specialist and your on-site recycled water supervisor will inspect pressure recorders for any spikes. 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.
4. At the end of the four hour test, the sprinkler stations will need to be activated.
5. If no cross-connection exists, the pressure recorders are removed.
6. 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.
7. The domestic water will be 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 the lower pressure. During this time, a CVWD cross-connection specialist and the on-site recycled water supervisor will inspect pressure recorders for any spikes. 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.
8. If no cross-connection exists, the pressure recorders are removed.
9. The results of the cross-connection control test are sent to the Department of Public Health and the Regional Water Quality Control Board for approval.

## SECTION G SAMPLE FORMS AND SITE SPECIFIC DETAILS

### SUMMARY OF STEPS TO OBTAIN RECYCLED WATER

- Potential Customer contacts CVWD for recycled water service, and CVWD responds in a timely manner.
- Potential Customer must have irrigation plans stamped by a registered landscape architect or a registered civil engineer.
- Obtain coverage under the general waste discharge requirements for discharge of recycled water for golf course and landscape irrigation Order No. 97-700 or equivalent version of this permit from the California Regional Water Quality Control Board of the Colorado River Basin Region (Regional Board) by submitting a Notice of Intent to the Regional Board and paying application/annual fees.
- Enter into an agreement with CVWD for receiving nonpotable water for golf course and landscape irrigation. The agreement between discharger and CVWD must be provided to the Regional Board within 90 days of receiving coverage under the Board Order 97-700.
- Landscape and Irrigation system plans must meet regulatory requirements of Order 97-700 or equivalent version of this permit, 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 17 and Title 22 Code of Regulations. 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 and approved by CDPH.
  - 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 CDPH.

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- 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 CDPH.
  - 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. Golf course 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 CDPH.
- Prior to construction, landscape and irrigation system plans must be submitted for approval to the following agencies (please allow for a 30 day comment period):  
Regional Board Water Quality Control Board,  
California Department of Public Health, and  
CVWD.
  - A pre-job meeting (preliminary inspection) is held before construction with CVWD’s representative, potential Customer and the contractor. This meeting is to cover the plan’s general notes, specific job requirements and cover any questions. Following this meeting, an initial cross-connection test is to be conducted on existing systems with the state and/or city or county health agencies.

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- The potential Customer may begin construction, according to the approved plans, contingent upon any other required permits or approvals being obtained. Approvals for deviations in the approved plans are to be sought as they occur.
- All work during construction must be inspected by CVWD and/or the local city or county Health Department **before** backfilling any buried piping. If any reclaimed 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.
- After construction is completed, CVWD and either CDPH or the local city or county Health Department must be notified for the final inspection and cross-connection test utilizing potable water supplied through an approved backflow prevention device on dual source sites. The recycled water meter is installed, potable water severed and conversion made to recycled water. During this walk through flow adjustments are made, tagging is inspected, and coverage is checked. A thorough cross-connection test is conducted at this time to verify that construction was performed correctly. CVWD and/or the local city or county Health Department will generate a punch list of corrections to be made if necessary.
- A follow-up walk through will be called for after all corrections from the first walk-through are completed if required. This walk-through will inspect to see that all corrections are complete, including color-coded plans for each controller that are accurate and placed at each controller cabinet.
- A cross-connection control test will be performed on the irrigation and domestic systems prior to the discharge of recycled water and at least once every four years thereafter. This test is to be conducted by an American Water Works Association (AWWA) certified cross-connection control program specialist or equivalent. The results of these tests are to be submitted to CVWD, CDPH, and the Regional Board within 30 days of test completion.
- Upon the successful completion of the inspection and cross-connection tests, the Customer will be granted permission for the normal operation of the system.
- Upon approval from the Regional Board and CDPH, 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 CDPH at least 30 days prior to use of recycled water.
- A Use Site Supervisor must be designated and his or her name and contact information must be provided in writing to CVWD and the Regional Board 30 days prior to discharge of recycled water. This person will be available to be

## CVWD Recycled Water Manual

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 CDPH, as per the CDPH requested time frame.
- At this time CVWD’s Non-potable Water Manager will discuss with the Customer and the Customer’s On-site Supervisor the responsibilities of the On-Site Supervisor, cross-connection control tests, etc.

**RECYCLED WATER - SITE INSPECTION REPORT**



**Coachella Valley Water District  
Cross-Connection Control Program  
Recycled Water System Inspection Report**

Date & Time arrived:	Date & Time of departure:	Total Time:
Site name:	Plat #:	
Site address:	Phone number:	
Accompanied On-site Supervisor on visual on-site inspection:  YES                      NO	On-Site Supervisor's name:	
	On-Site Supervisor's phone number:	
	Has the On-Site Supervisor attended recycled water training? YES                      NO	
Type of Inspection (circle):  New                      4 yr CCCT                      Retrofit  Construction                      Annual                      Re-inspection	Domestic Water Services Backflow Protection: Tested                      Date: _____ Repaired                      Date: _____ Replaced                      Date: _____	
Confirm that a copy of Board Order 97-700 or 97-048 is on site. If so, where is it located? _____ If not, please provide them with a copy.		
Are on-site grounds maintenance personnel familiar with the requirements of the Board Order?                      YES                      NO		
<b>Identification/Modification of Recycled Water and Potable Water System</b>		
Are the piping, valves, quick couplers, hydrants and other appurtenances properly marked (above and below ground)?  YES                      NO  If not, what is needed and where? _____	Are valve tags visible and legible?                      YES                      NO Checked valves on holes # _____  If not, what is needed and where? _____	
Please list locations of Recycled Water Use signs:  Are the signs 4"x8"?                      YES                      NO Is this symbol present in sign?                      YES                      NO	Are the Signs Legible?                      YES                      NO If not, where? _____  Is Purple excessively faded?                      YES                      NO If so, where? _____	



## SECTION H LOCAL GOVERNING AGENCIES

### **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 Public Health**

Southern California Drinking Water Field Operations Branch  
1350 Front Street, Room 2050, San Diego, CA 92101  
(619) 525-4159

## 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 break between a water line and a receiving tank or reservoir which is at least double the diameter of the pipeline vertically above the rim of the tank or reservoir, and in no case less than one-inch.

**Applicant** – An Owner or authorized representative of a potential reuse site who applies for recycled water service under terms of the appropriate regulations. An approved Applicant becomes a Customer.

**Approved Backflow Prevention Assembly** – A device installed to protect the potable water supply from contamination by nonpotable water and is approved by the State of California.

**Approved Use** – An application of recycled water in a manner, and for a purpose, designed in a Customer agreement issued by CVWD and in compliance with all applicable Regulatory Agency requirements.

**Approved Use Area** – A site with well-defined boundaries, designated in a Customer agreement 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 physical connection between any part of a water system used or intended to supply water for drinking purposes and any source or system containing water or substance that is not or cannot be approved as safe, wholesome and potable for human consumption.

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

**Inspector** – Any person authorized by CVWD or the local health agencies to perform inspections on or off the Customers site before construction, during construction, after construction and during operation.

**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).

## CVWD Recycled Water Manual

**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 whose regular or assigned work involves the supervision, operation or maintenance of equipment on any portion of on-site facilities using recycled water.

**Operator** – Any person, persons or firm, who by entering into an agreement with a Customer is responsible for operating on-site facilities.

**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, 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.

**Public Water Lines** – Pipelines owned and operated by CVWD.

**Private Water Lines** – The portion of the pipeline extending past a CVWD meter utilized for service of private property.

**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.

Note: If the recycled water provided by an investor-owned utility functioning as the CVWD, rates and fees are approved or amended by the California Public Utilities Commission.

## CVWD Recycled Water Manual

**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.

**Recycled Water Agreement** – An agreement issued by CVWD to a recycled water service Applicant after the satisfactory completion of the service application procedures. This Agreement forms a service agreement between the Customer and the Recycled Water

Agency that legally binds the Customer to all conditions stated in the Agreement and all applicable Regulatory Agency requirements.

**Regulatory Agencies** – Those public agencies legally constituted to protect the public health and water quality, such as the State Department of Health Services, 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.

**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 reclaimed 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.

**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 Recycled Water Agreement with CVWD. The Customer and Owner may be the same.

**Violation** – Noncompliance with any condition or conditions of the Recycled Water Agreement, 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 CDPH standards for safety. Even though 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 is 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 buildup 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, an 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.

## CVWD Recycled Water Manual

- 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.

### **Increased Mowing**

Reports from many turf sites using recycled water have reported the need to mow their grass more often. This may be the direct result of additional nutrients in the recycled water being available for uptake by the grass. This information should be used by the On-site Supervisor to reduce fertilizer application to avoid using unnecessary fertilizer and optimize mowing frequencies.

## **“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 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 runoff the use site property.
- 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 Health Department.

# 1 Recycled Water Uses Allowed 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
<b><i>Irrigation of:</i></b>				
Food crops where recycled water contacts the edible portion of the crop, including all root crops	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
Parks and playgrounds	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
School yards	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
Residential landscaping	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
Unrestricted-access golf courses	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
Any other irrigation uses not prohibited by other provisions of the California Code of Regulations	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
Food crops, surface-irrigated, above-ground edible portion, and not contacted by recycled water	<b>Allowed</b>	<b>Allowed</b>	Not allowed	Not allowed
Cemeteries	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed
Freeway landscaping	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed
Restricted-access golf courses	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed
Ornamental nursery stock and sod farms with unrestricted public access	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed
Pasture for milk animals for human consumption	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed
Nonedible vegetation with access control to prevent use as a park, playground or school yard	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed
Orchards with no contact between edible portion and recycled water	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>
Vineyards with no contact between edible portion and recycled water	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>
Non food-bearing trees, including Christmas trees not irrigated less than 14 days before harvest	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>
Fodder and fiber crops and pasture for animals not producing milk for human consumption	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>
Seed crops not eaten by humans	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>
Food crops undergoing commercial pathogen-destroying processing before consumption by humans	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>
<b><i>Supply for impoundment:</i></b>				
Nonrestricted recreational impoundments, with supplemental monitoring for pathogenic organisms	<b>Allowed</b> <sup>2</sup>	Not allowed	Not allowed	Not allowed
Restricted recreational impoundments and publicly accessible fish hatcheries	<b>Allowed</b>	<b>Allowed</b>	Not allowed	Not allowed
Landscape impoundments without decorative fountains	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed

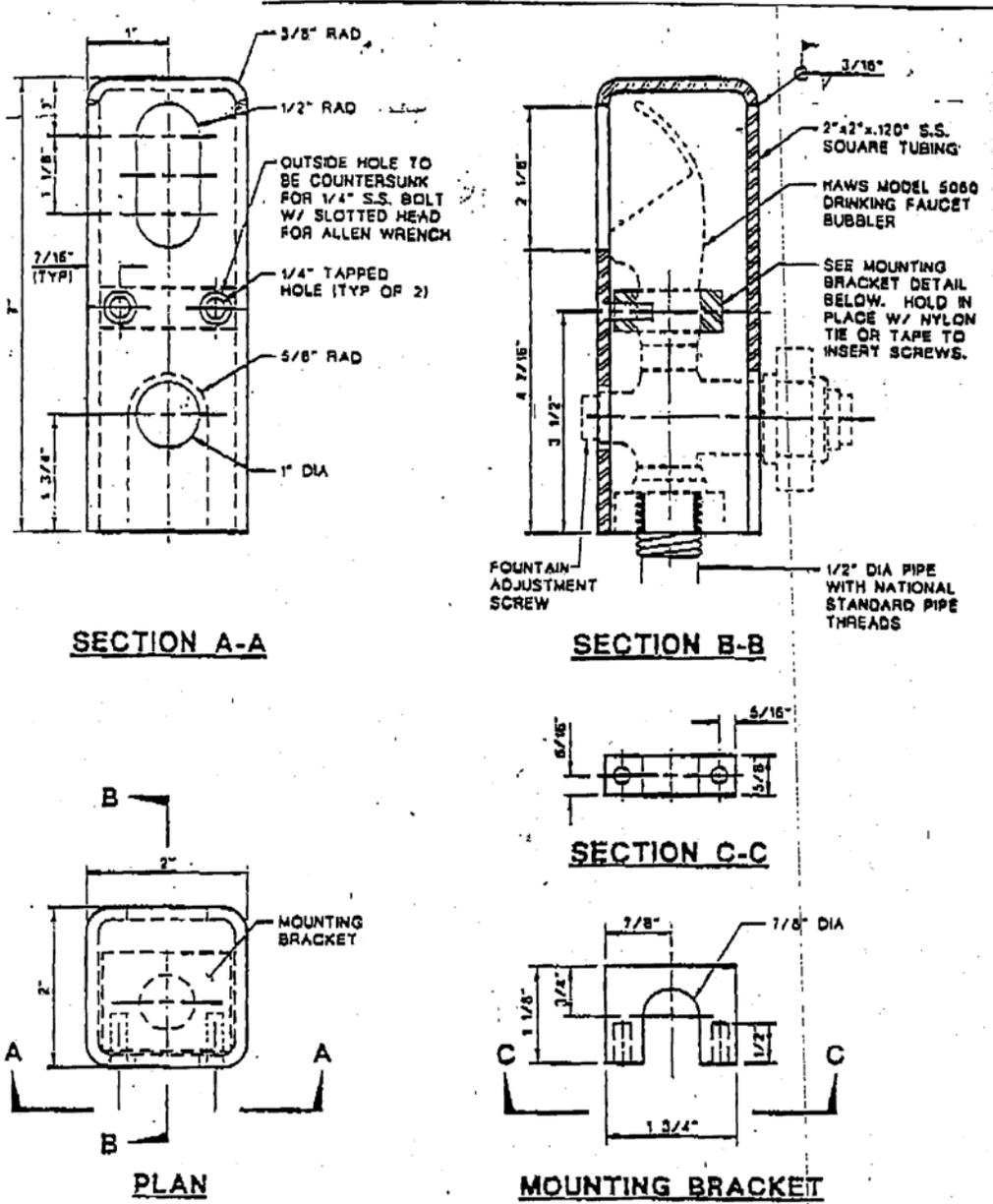
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<b>Supply for cooling or air conditioning:</b>				
Industrial or commercial cooling or air conditioning involving cooling tower, evaporative condenser, or spraying that creates a mist	<b>Allowed</b> <sup>3</sup>	Not allowed	Not allowed	Not allowed
Industrial or commercial cooling or air conditioning not involving cooling tower, evaporative condenser, or spraying that creates a mist	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed

## Recycled Water Uses Allowed<sup>1</sup> 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.

<b>Treatment Level</b>				
<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
<b>Other uses:</b>				
Groundwater Recharge	<b>Allowed</b> under special case-by-case permits by RWQCBs <sup>4</sup>			
Flushing toilets and urinals	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
Priming drain traps	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
Industrial process water that may contact workers	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
Structural fire fighting	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
Decorative fountains	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
Commercial laundries	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
Consolidation of backfill material around potable water pipelines	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
Artificial snow making for commercial outdoor uses	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
Commercial car washes, not heating the water, excluding the general public from washing process	<b>Allowed</b>	Not allowed	Not allowed	Not allowed
Industrial process water that will not come into contact with workers	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed
Industrial boiler feed	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed
Nonstructural fire fighting	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed
Backfill consolidation around nonpotable piping	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed
Soil compaction	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed
Mixing concrete	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed
Dust control on roads and streets	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed
Cleaning roads, sidewalks and outdoor work areas	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	Not allowed
Flushing sanitary sewers	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>	<b>Allowed</b>



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

**DRINKING FOUNTAIN COVER DETAIL**

9/92

NOT TO SCALE