

CAMROSA WATER DISTRICT

Recycled Water Systems

User's Manual



On-Site Supervisor Do's and Don'ts

Do's

- Install and maintain signs at all points of entry (pedestrian and vehicular)
- Install and maintain labels and tags on recycled and potable water systems
- Use quick couplers or removable key hose bibbs instead of T-handle hose bibbs
- Contact Camrosa if any recycled water system modifications are anticipated
- Immediately contact water utility 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
 - A cross-connection between the recycled and potable water systems
- Educate/train site workers on safe use and restrictions of recycled water
- Keep records and as-built drawings up-to-date and accessible
- Assist and cooperate during Periodic Visual Inspections
- 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 by either overspray or overwatering
- Don't use recycled water on an unapproved site
- Don't put hose bibbs on recycled water systems (unless public access is restricted)
- Don't use the same equipment on both recycled water and domestic water systems (for example, quick couplers, tools, etc.)
- Don't modify any water system without prior approval of the water utility

INTRODUCTION

PURPOSE

The purpose of this Manual is to provide the recycled water “User” and “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 non-potable applications is, in many cases, mandated by State law. This Manual provides necessary information to meet existing regulations for the operation of the User’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.

Since legal and regulatory requirements can change without the express approval or knowledge of the Camrosa Water District, the Camrosa Water District assumes no liability for errors in this Manual. It’s the responsibility of the User to check with the Camrosa Water District before initiating any operational or physical changes to the use site’s system.

WHAT IS RECYCLED WATER?

“Recycled Water,” as used in this Manual and defined in Title 22, Chapter 3 of [the California Code of Regulations](#), refers to tertiary-treated water produced from a three-stage treatment of municipal wastewater. The facilities that produce Recycled water are known as Water Reclamation Plants. The recycled water produced by these plants is delivered to users through distribution systems owned and operated by “Recycled Water Agencies”, in your case, the Camrosa Water District.

Recycled Water is virtually colorless and odorless, and is allowable for full-body human contact but **not for direct human consumption**. The sensible use of recycled water affords an excellent choice for essentially all non-potable applications. Properly managed, recycled water is safe to use.

WHAT ARE “DUAL-PLUMBED” SITES?

“Dual Plumbed” sites are reuse sites where both potable (domestic and drinking) water and recycled water are present. Each plumbing system is used to distribute different quality waters; in this example, potable drinking water and recycled water. Dual plumbing might be necessary on sites where the higher quality drinking water is not required for all site uses. For example, an agricultural site such as a ranch where recycled water is used for irrigation of crops but also is containing a domestic residence where potable drinking water is needed. The public must not be allowed access to the recycled water system (such as from hose bibs). On sites with dual plumbing and differing quality waters, the potable distribution system must be protected with an approved backflow prevention device.

BENEFITS OF RECYCLED WATER IRRIGATION

As population growth increases the demand for potable water and the reliability of imported water supplies decreases, the future availability of potable water for irrigation is questionable. In addition, as the costs of potable water supplies continue to climb, recycled water becomes more attractive as an alternative water supply.

The amount of recycled water available is generally not affected by drought, meaning customers don't risk losing expensive crops or landscaping due to water shortages and potential mandatory rationing.

Recycled water may also contain an appreciable nutrient content, such as nitrogen, potassium, calcium, magnesium, sulfur, and other macro and micronutrients which may provide some level of fertilization during the irrigation process. A recycled water quality analysis can be obtained from Camrosa Water District.

Irrigating with recycled water is making use of a valuable resource that would otherwise be disposed of. Approved uses of tertiary-treated recycled water are as follows:

- **Urban landscape** – Parks and playgrounds, schoolyards, unrestricted golf courses, residential landscaping, cemeteries, ornamental nurseries, and sod farms
- **Agriculture** – Food crops for human consumption, orchards, vineyards, fodder fiber and seed crops, non-fruit bearing trees, pasture for milking animals, water supply for livestock.
- **Impoundments** – Restricted and unrestricted (full-body contact) recreational impoundments, decorative lakes and fountains, fish hatcheries.
- **Industrial** – Industrial processes (e.g. paper manufacturing, carpet and textile dyeing, boiler feed), cooling towers and air conditioning, non-residential toilet, urinal, and floor drains, structural and non-structural fire fighting, commercial laundries, commercial car

washes, concrete mixing, construction (dust control, soil compaction, backfill consolidation around pipelines, including potable), street and sidewalk cleaning, flushing sanitary sewers, snow making.

ARE THERE DISADVANTAGES TO USING RECYCLED WATER?

Recycled water must be used responsibly within established guidelines, regulations and permit requirements. Because of its origins and the level of treatment provided, recycled water is not suitable for direct human consumption. Unlike potable water, recycled water can only be used for approved uses, at approved locations, under the provisions of established regulations, agreements or permits. At the time of this writing, there have been no known cases of illness in the State of California due to the proper use of recycled water (according to the California Department of Public Health, CDPH). In very rare occasions, there may be temporary interruptions of recycled water deliveries, as there are in any utility. Such instances are generally short in duration.

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 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.

OPERATION & MAINTENANCE

GENERAL

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

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 Water Quality Control Board, the CDPH, the local city or county Health Department and/or the recycled water Producer. The User must comply with the conditions of any User Agreement issued by the Camrosa Water District.

Camrosa Water District may not deliver recycled water to Users that do not or will not comply with use site requirements.

CONDITIONS OF SERVICE

The User must comply with the following conditions.

Runoff Conditions

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

Ponding Conditions

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

Windblown Spray Conditions

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

Unapproved Uses

Use of recycled water for any purposes other than those explicitly described in the Camrosa Water District's water recycling permit is strictly prohibited.

Use in Unapproved Areas

The delivery and use of recycled water for any reason, including approved uses, in areas

other than those explicitly designated in the current effective user permit and without the prior approval of the appropriate Camrosa Water District permit, 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**

DESIGNATION OF SITE SUPERVISOR

It is the User'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 User shall designate, with notification going to the Camrosa Water District, a Site Supervisor to be the contact person with the Camrosa Water District. The following are requirements of the Site Supervisor position:

- Received training or be able to demonstrate knowledge of the application and maintenance of a recycled water system.
- Be aware of, and familiar with, this Manual.
- Be available to the Camrosa Water District at all times and have the authority to carry out any requirements of the Camrosa Water District.
- 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 the Camrosa Water District 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.

Camrosa Water District must be notified immediately of any change in Site Supervisor personnel. Camrosa Water District will provide the Site Supervisor with the results of periodic system inspections and will report all violations to the appropriate Regulatory Agency according to applicable procedures established by law, code or permit, or practice.

PERSONNEL TRAINING

All new employees must be trained in the proper use of recycled water. Supervisory personnel and the Site Supervisor should be held accountable to ensure that employees are not using recycled water carelessly or improperly. It is the responsibility of the User 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 regulations are followed.
- Operations personnel must understand that conditions such as ponding and runoff are not allowed.
- Good personal hygiene must be followed (for example, washing hands after working with recycled water).
- Operations personnel must understand that there is never to be a direct connection between the recycled water system and the potable water system

PERIODS OF OPERATION

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

- Irrigation may only occur during periods of least use of the approved area by the general public. This is usually between the hours of 10 p.m. and 6 a.m.; however, areas where public access is generally prohibited or minimized, such as commercial nurseries and freeway landscaping, may be irrigated at any time.
- The recycled water system must be operated to prevent overspray or windblown spray into unapproved areas.
- Even though tertiary-treated recycled water is approved for full-body contact by the CDPH, irrigation of public areas during other times may be performed if the irrigation system is operated manually and is supervised to avoid inadvertently exposing any members of the general public. This provision must be strictly followed.
- Consideration should be given to allow a reasonable dry-out time before the area is to be used by the public.
- Automatic control systems are to be used and programmed to prevent ponding

and runoff of recycled water.

- The recycled water system must not be allowed to operate for periods longer than needed to satisfy the landscape water requirements. Recycled water must never be applied at a rate that is greater than the infiltration rate of the soil. Exceptions to this requirement for purposes such as leaching of soil must be specified in the User Agreement.

HOSE BIBS

Hose bibs or other appurtenances that might allow public access to the recycled water system for unapproved use or for cross-connection to the potable water system are strictly prohibited in all areas accessible to the general public. In these areas, only quick-couplers are allowed and must be of a different type than those that may be used on the use site's potable water system. Hose bibs 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, along with the "Do Not Drink" symbol. Workers in these areas must be instructed not to drink from these hose bibs.

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.

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 disinfected.

MODIFICATIONS

The User must not make any modifications to its on-site recycled water system (or potable system, if it's in close proximity to the recycled system) without the prior approval of the Camrosa Water District. This includes modifications to the approved plans or to an operational system. Detailed plans of any modifications should be submitted to the Camrosa Water District and the modifications inspected by the Camrosa Water District before their being placed in operation.

Routine maintenance of the irrigation system, such as pipeline repairs, sprinkler replacement

and other similar activities that don't result in a substantial change in either the recycled or potable water systems, or any agreed to operating plans, don't need prior approval by the Camrosa Water District.

MAINTENANCE

The User 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 should be conducted by the User of the entire recycled water system including sprinkler heads, spray patterns, piping and valves, pumps, storage facilities, lakes, controllers, signage, etc. Immediately correct 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 eliminate ponding, runoff 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 must be carried out. Records of annual tests, repairs and overhauls must be kept by the user with copies forwarded to the Camrosa Water District and the local city or county Health Department.

PERIODIC SITE INSPECTIONS

Periodic site inspections of the User's recycled water irrigation system may be performed by Camrosa Water District personnel periodically. Such inspections include, at a minimum, the visual inspection of all back-flow prevention devices, pump rooms, exposed piping, valves, pressure reducing stations, points of connection, sprinklers, controllers, lakes, storage facilities, signs, labeling, tags, etc. The Site Supervisor's maintenance records should also be inspected.

These inspections are the responsibility of the entity holding the master water recycling permit issued by the Regional Board. This may be the Camrosa Water District or the Recycled Water Producer, if separate. Whoever the responsible agency is may perform this inspection, or it may be delegated to a third party. The responsible agency will also determine the frequency

of these inspections, based on local conditions. The Camrosa Water District 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 should be signed and dated by both the Site Supervisor and the entity performing the inspection. The original form should be kept by the inspecting entity with copies going to the Site Supervisor, the Camrosa Water District and any required regulatory agency.

EMERGENCY PROCEDURES

In case of a major earthquake, the Site Supervisor should immediately inspect the potable and recycled water systems for damage. If either system appears damaged, both water systems should be shut off at their points of connection. The Site Supervisor should immediately contact the Camrosa Water District for further instructions.

Emergency Modifications

Emergency modifications or repairs can be made by the User to the recycled water system without the prior approval of the Camrosa Water District to prevent contamination, damage or a public health hazard. As soon as possible the User must notify the Camrosa Water District of the emergency modifications and file a written report if requested.

Unauthorized Discharge

It's the responsibility of the User to report to the Camrosa Water District all system failures that result in an unauthorized discharge of more than 50,000 gallons of tertiary treated recycled water (or 1,000 gallons for any lesser quality recycled water). 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 User's premises, the Camrosa Water District must be immediately notified by the User.

VIOLATIONS

The Camrosa Water District reserves the right to decide if a violation of the conditions under which the User 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 bibs, 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 Site Supervisor to immediately notify the Camrosa Water District 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 Site Supervisor to immediately notify the Camrosa Water District of any violation he/she believes might imminently occur because of any action the User's personnel might take during the operation of the recycled or potable water systems.

CORRECTIVE ACTION

If the Camrosa Water District's investigation reveals that a violation has occurred on the reuse site, the User will be immediately notified of the violation and what corrective actions must be taken. It is the responsibility of the User to immediately initiate corrective action to eliminate the violation. If the Camrosa Water District believes the violation constitutes a hazard to the public health, the District must immediately stop recycled water service to the User. It will be at the discretion of the District to decide if a violation has been adequately corrected. The Camrosa Water District may impose a startup fee upon resumption of service to a User whose service has been terminated, depending on the provisions of the User Agreement.