

RECYCLED WATER USE GUIDELINES
FOR
NON-RESIDENTIAL SITES

**El Dorado Irrigation District
2890 Mosquito Road
Placerville, California**

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SECTION 1.0

GENERAL INFORMATION

1.1 INTRODUCTION

These Recycled Water Use Guidelines for Non-Residential Sites are to provide basic understanding of what recycled water is and to provide a source of information. This information, based on existing codes, laws, and regulations of agencies that govern water reclamation activities, will help the user to understand all of the requirements involved in the use of recycled water. It is the responsibility of the user to obtain from El Dorado Irrigation District (EID), the most recent regulations concerning recycled water use prior to operating or making changes to the recycled water system. Standards for designing a recycled water system are provided in the District Recycled Water Manual for Non-Residential Sites which can be obtained from the District.

1.2 WHAT IS RECYCLED WATER?

Recycled water is a manufactured product that is highly treated and disinfected water originating from municipal wastewater. Water reclamation is the treatment and management of wastewater to produce water of suitable quality for non-potable beneficial uses. The treatment processes and final product quality must, by law, meet standards defined by Title 22 of the California Code of Regulations (Title 22) and National Pollution Discharge Elimination System (NPDES) permits.

To produce recycled water, wastewater is highly treated at a reclamation plant that duplicate nature's own cleansing process, but at a much faster rate. The Districts Reclamation facilities are located at the El Dorado Hills and Deer Creek Wastewater Treatment Plants. The result of this treatment is high quality water that is odorless, colorless, and pure enough for human contact, but not for human consumption. In the District Service Area, all recycled water produced is of the highest quality, referred to as disinfected tertiary.

1.3 USES OF RECYCLED WATER

Currently, landscape irrigation is the single largest use of recycled water within the District Service Area. In addition, recycled water can also be used for some industrial processing, cooling towers, soil compaction and dust control at construction sites, recreational lakes, ponds, ornamental fountains, crop initiation, and flushing toilets and urinals in some commercial buildings and offices. In fact, recycled water can be used for most non-potable needs.

Recycled water has been used successfully in California and other states, particularly Florida, Arizona, and Texas, for many years. Many well known sites have used recycled water, such as San Francisco's Golden Gate Park as early as 1932. The El Tovar Hotel at Grand Canyon National Park used recycled water for toilet flushing in 1955. In fact, the first regulations published in California were adopted in 1918. It is expected that continued demand will allow recycled water to serve new and expanding uses.

1.4 IS RECYCLED WATER SAFE?

Recycled water is safe to use! Potential health risks associated with the use of recycled water have been well documented nationwide as water reclamation projects are implemented and carefully monitored by state and local health authorities. Tertiary recycled water is a highly treated, filtered and disinfected product according to Title 22 criteria. These standards for recycled water are among the most stringent in the world.

SECTION 2.0

OPERATING CONDITIONS AND USER GUIDELINES

2.1 GENERAL

For the most part, recycled water systems are identical to those that supply potable water. However, there are basic conditions and requirements, different from potable systems which must be understood and followed when constructing, operating, and maintaining a recycled water system. The following section provides general guidelines in the use of recycled water.

2.2 OPERATING CONDITIONS

- A. User Reclamation Plans (URP) - Before using recycled water, the user must obtain a User Reclamation Plan. This document must be approved by the District. The URP includes information concerning how, where, and how much recycled water will be used.
- B. On-Site Non-Residential Facilities Plans - The user must submit plans for review by the District and submittal with the URP.
- C. Liability and Responsibility - The user assumes all liability and responsibility for all phases of construction, operation, and maintenance of the on-site recycled water system, which starts at the recycled water meter. The District is responsible for water quality, operation, and maintenance of the distribution system upstream of the recycled water meter.
- D. Compliance with Rules and Regulations - Recycled water must be used in accordance with all applicable federal, state and local ordinances and regulations and the URP. Inspections will be made periodically by the District to ensure continued compliance with all regulatory agencies.
- E. Authorized Uses - Recycled water may be used only as allowed in the URP. Discharge of recycled water for any purpose, including approved uses, in areas other than those authorized in the URP, is prohibited.
- F. Notification and Violations - It is the responsibility of the user to routinely monitor and inspect the recycled water system for any situation that may not be in conformance with the regulatory requirements. Problems such as the destruction of information signs, controller malfunctions, excessive ponding or runoff, broken or out-of-adjustment sprinkler heads, etc., must be corrected as soon as they become apparent. The District will perform periodic inspections to detect any such situations.

Emergency situations such as pipeline ruptures; cross-connection problems or emergency modifications made to prevent contamination of the potable water system must be reported immediately to the District. The District may approve temporary controlled use of recycled water while corrections are being made. The District may also take any actions needed with respect to the operation of the on-site non-residential recycled water system to protect the public health. This may include immediate shut down of service to the site.

- G. Recycled Water Supervisor - The user must designate a "Recycled Water Supervisor" to be responsible for the day-to-day activities and long-term operation and maintenance of the system. In addition, all personnel involved with operating and maintaining the recycled water system must have training that includes the guidelines contained in this manual and the URP.

- H. Time of Operation - Irrigation with recycled water will be limited to those hours, which provide a minimum opportunity for public contact. The District reserves the right to control and schedule the use of recycled water to maintain acceptable working conditions within the recycled water distribution system. The District in accordance with regulations and the URP will administer these and other service conditions.

The hours allowed for irrigation subject to the Requirements of the URP are as follows:

Schools	9:00 p.m. to 6:00 a.m.
Commercial Landscapes	unrestricted
Parks	9:00 p.m. to 6:00 a.m.
Dual Plumbed Homes	9:00 p.m. to 6:00 a.m.
Construction Water	unrestricted

Irrigation outside of the established time frames may be allowed under supervision of the District.

- I. System Modification - If there is a need for modification, renovation, additions, or other changes in the recycled water system, approval must be obtained in writing from the District prior to the changes.

2.3 GUIDELINES

This section is intended to be general guidelines, only. Refer to the Recycled Water On-site non-residential Facilities Standards for details of system requirements.

- A. Identification - The recycled water system and related equipment must be differentiated from the potable system to maintain a visible means of separation. Identification consists of using purple pipe, purple-faced meters, sprinkler heads with purple caps, purple irrigation boxes, and other means as listed in the URP. Under no circumstances should purple pipe or fixtures be used in the potable system.
- B. Separation - Buried recycled and potable water pipes will be separated to the maximum extent possible and will have a minimum 10-foot horizontal and 1-foot vertical separation.
- C. Pressure - As the user, you are responsible for maintaining operating pressures downstream from the meter. Pumps or pressure reducers may be used to meet the needs of your recycled water system.
- D. Protection of Public Facilities - All drinking fountains, picnic benches, food establishments, and other such public facilities located within the use area must be protected from direct contact with recycled water.
- E. Quick Coupler Devices - With approval and proper identification, quick coupler devices can be used in commercial areas. Hose bibs are not allowed in recycled water systems. All hose bibs shall be supplied with potable water only.
- F. Distribution with Mobile Tanks or Trucks
- ◆ Recycled water may be transported in approved vessels providing that material from cesspools or septic tanks have not been previously contained within the vessel. Before receiving recycled water, a construction meter approved for use with recycled water must be obtained from the District.
 - ◆ An air gap that is at least twice the diameter of the supply pipe must be used to fill the vessel or a Reduced Pressure Principle Device (RPPD) may be used with approval from the District
 - ◆ There shall be no leaks in the vessel and appurtenant valves and fittings.
 - ◆ Signs shall be placed in appropriate locations on the vessel indicating that it contains nonpotable water.
 - ◆ Potable water intended for potable use shall not be placed in vessels that have previously contained recycled water. Hoses, valves, pumps, piping, and other equipment previously used with recycled water are not to be used with potable water and shall be designated for recycled water use only.

2.4 CROSS CONNECTION

A cross connection is any connection between a potable water system and a nonpotable water system. Since recycled water is not safe for human consumption, connections between it and the potable water system are not allowed. Backflow is defined as the undesirable reversal of flow into a potable water distribution system as a result of a cross connection. For backflow to occur, a connection must exist between the potable and the nonpotable system.

The District Regulation No. 10 sets forth policy, authority, and requirements for the prevention of contamination by backflow and cross connections.

Where potable water and recycled water serve the same parcel, a backflow prevention device must be installed on the potable water service to prevent water from flowing in the reverse direction. A Cross Connection Specialist will test the backflow prevention device annually.

The District, or its representative, will conduct periodic cross connection tests to insure there are no connections between the potable water and recycled water systems. An initial cross connection test is performed as part of the final inspection process.

If a test reveals a cross connection, both the recycled and potable water systems must be immediately shut down at the meter. Neither system may be reactivated until the cross-connection has been eliminated, all contamination has been removed, and the regulatory agencies have been satisfied that the problem has been corrected.

SECTION 3.0

IDENTIFICATION OF RECYCLED WATER EQUIPMENT AND USE AREAS

3.1 GENERAL

Equipment and materials used in recycled water systems are in most cases the same as in potable systems. Over the last 10 years, the recycled water industry has adopted the color purple to signify that recycled water is being used. As a result, there are many items currently available for use in recycled water systems.

Based on the amount of exposure the public has to recycled water and the level of wastewater treatment, some sites may warrant more visible identification and higher levels of awareness that recycled water is being used. For example, agricultural users tend to require less intensive measures than a municipal park. Because of this variability, each site is considered on a case-by-case basis. The requirements for visible identification are determined in the URP for each site.

3.2 PIPING

Recycled water piping must be differentiated from potable piping by using purple pipe printed "Recycled or Reclaimed Water". Purple pipe is available from most irrigation supply dealers.

- A. Above Ground Equipment - Recycled water equipment that is above ground, or exposed such that it is clearly visible to the public, must be differentiated from potable water equipment by the following means:
 - ◆ Irrigation valve box covers shall be manufactured purple and imprinted "Recycled or Reclaimed Water."
 - ◆ Quick connect coupler valve covers will have purple lids with a locking cover imprinted or cast into the top visible surface, "Recycled or Reclaimed Water."
 - ◆ Sprinkler heads will have purple snap-on caps.
- B. Signage - Signs must be placed at various locations in the use area. These signs must state that recycled water is used and that it is not safe for drinking. Signs will require maintenance due to weather-related elements, accidents, and vandalism to be kept in a presentable condition. Where appropriate, languages in addition to English should be used on signs. All recreational impoundments containing recycled water must be posted with appropriate signs.
- C. Service Connections - Recycled water services must be differentiated from potable water services by the following means:
 - ◆ Meter box lids will be labeled "Recycled or Reclaimed Water."
 - ◆ Meters will have a purple face and purple body.
 - ◆ Regulators will be tagged, "Recycled or Reclaimed Water, Do Not Drink."
 - ◆ Valves will be tagged "Recycled or Reclaimed Water, Do Not Drink."

SECTION 4.0

PRACTICAL DO'S AND DON'TS

4.1 DO'S

- ◆ Take preventative measures to insure no cross connections can occur.
- ◆ Maintain and submit record drawings of any and all changes or additions to your recycled water system.
- ◆ When performing repairs or modifications to the recycled water system, use only materials approved for recycled water use.
- ◆ If your system has quick couplers, be sure the on-site supervisor assumes sole responsibility of the quick couplers, and the use of these connectors is closely monitored.
- ◆ Closely monitor the recycled water system operation and be alert to overspray, run-off, and ponding. If this occurs, make corrections to minimize these conditions and notify the District, if required.
- ◆ Keep systems functioning properly. Repair any and all damage to the recycled water system immediately.
- ◆ Educate all workers on the correct uses and restrictions of recycled water.
- ◆ Keep all records and references complete, up-to-date, and accessible.
- ◆ Keep others informed of all activities involving the recycled water system.
- ◆ Post and maintain signs in conspicuous locations as required in the URP.
- ◆ Adjust spray heads to minimize overspray onto adjacent hardscapes, patios, decks, pools, drinking fountains, etc.

4.2 DON'TS

- ◆ Do not drink recycled water.
- ◆ Do not use recycled water to wash hands or other parts of the body.
- ◆ Do not use equipment (i.e. tanks, valves, hoses, pipes, and pumps) that has been in contact with recycled water in conjunction with any potable water system.
- ◆ Do not attempt to modify or change the recycled water system without written authorization from the District.
- ◆ Do not remove or tamper with recycled water warning signs.

SECTION 5.0
CONTACT LIST

The following list provides some of the contact personnel for questions regarding the use of recycled water.

El Dorado Irrigation District

Recycled Water Compliance Inspector.....	530-622-4513
Recycled Water Supervisor.....	916-933-6202
Wastewater Supervisor, El Dorado Hills WWTP.....	916-933-6953
Wastewater Supervisor, Deer Creek WWTP.....	530-672-9044
EID Customer and Developer Services.....	530-622-4513
EID After Hours Emergency.....	530-622-4513