Recycled Water Use Guidelines

2015

Dublin San Ramon Services District
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SECTION 1

Introduction

Purpose

This document contains Dublin San Ramon Services District (District) regulations and guidelines for the design, installation, operation, and maintenance of on-site recycled water facilities for irrigation and water features; transport and use of recycled water for dust control and surface cleaning; and use of recycled water in dual-plumbed buildings and industrial facilities. It covers requirements for existing sites and new development and should provide sufficient information for recycled water customers to meet all applicable regulations.

Authority and Sources

Dublin San Ramon Services District Ordinance Numbers 301 and Title 3 and 4 of the District Code set forth regulations regarding the use of recycled water within the District's service area. A copy of Ordinance 301 is included in Appendix 1. This document, *Recycled Water Use Guidelines and Requirements* (Guide) is prepared by the District Engineer and may be updated as regulations and procedures change over time.

The Guide draws on a number of references. Of primary importance are the California Code of Regulations, Title 22 and Title 17; the California Health and Safety Code; the California Water Code, *Guidelines for the Distribution of Non-potable Water* and *Guidelines for the On-Site Retrofit of Facilities Using Disinfected Tertiary Recycled Water*, both developed by the California-Nevada Section of the American Water Works Association (AWWA); and the 2012 International Association of Plumbing and Mechanical Officials (IAPMO) Uniform Plumbing Code (UPC). It also draws on regulations contained in the San Francisco Bay Regional Water Quality Control Board (RWQCB) Permit (No. 96-011), which governs use of recycled water in the District's service area.

This Guide was developed specifically for customers of Dublin San Ramon Services District and it takes precedence over general guidelines (including AWWA guidance documents) where differences are noted. Since codes, laws, and regulations can change without the District's prior approval or knowledge, the District does not assume any liability for errors in this document.

Within the District's service area, customers or individual facilities may have additional site-specific requirements, which will be specified in the site's Recycled Water Use License (License) or Water Reuse Permit (Permit).

Approved Uses of Recycled Water

The California Department of Public Health (CDPH) has approved a variety of uses for recycled water. These include, but are not limited to, landscape and agricultural irrigation, construction water, dust control, water for industrial purposes, impoundments (fountains), and flushing of indoor toilets and urinals. Appendix 2 lists all acceptable uses of recycled water by level of treatment. The District produces disinfected tertiary-treated recycled water, which is the highest level of treatment approved by CDPH.

Recycled water shall be used only for uses approved by the District and CDPH. The State of California regulates the use of recycled water, as directed under Title 22. The District, at its discretion, may require or specify where and how recycled water can be utilized within its service area, so long as it complies with state requirements.

Permitted Uses

At this time the District issues Recycled Water Use Licenses or Water Reuse Permits for the following uses:

- ✓ Landscape irrigation
- ✓ Dust control and surface cleaning
- ✓ Toilet and urinal flushing
- ✓ Industrial uses

This Guide discusses how to obtain the license or permit from the District and additional guidelines and requirements for each approved use.

Acknowledgement

In preparing this document, the District acknowledges the assistance of a number of agencies, including California Department of Public Health and San Francisco Bay Regional Water Quality Control Board. In particular, the District acknowledges and thanks City of Santa Rosa, South Bay Water Recycling, El Dorado Irrigation District, City of Redwood City, East Bay Municipal Utility District, Central Contra Costa Sanitary District and Los Angeles Recycled Water Advisory Committee for sharing key reference materials. The District also acknowledges and thanks the City of Dublin, Dublin Unified School District, City of San Ramon, Valley Crest Landscape, and Dutchover and Associates for their participation in the stakeholder meeting and review of the Guidelines. In addition to the above agencies, Staff also referenced the 2*012 Uniform Plumbing Code*, AWWA's Guidelines for Distribution of Nonpotable Water, and WaterReuse Association's *Manual of Practice How to Develop a Water Reuse Program* in the development of the Guidelines.

SECTION 2A

LANDSCAPE IRRIGATION

Plan Preparation, Submittal and Review

Determination to Use Recycled Water

According to District Ordinance 301 and District Code Chapter 3.20, recycled water shall be used for non-potable uses where it is available. **All new development within the District's water service area is required to use recycled water for landscape irrigation and other approved uses.** The District Engineer, or his or her designee, may grant an exemption to this requirement if he or she determines that at least one of the following criteria applies:

- The project is a residential development where the landscape areas requiring irrigation are not owned in common.

- The project is a residential development where no homeowners' association or similar entity will be responsible for irrigation system maintenance and operations.
- The use of recycled water presents an economic hardship for the development because of its distance from available or planned recycled water sources, as determined by the District Engineer.
- Recycled water demand is very slight relative to the development's overall water demand, as determined by the District Engineer.
- The supply of recycled water is inadequate to meet the development's demand, as determined by the District Engineer.

Existing connections to the potable water system that serve either irrigation systems or other uses approved for recycled water may be required to convert to recycled water when it becomes available. All recycled water systems will be metered separately from potable water systems and must have no cross-connections to the potable water system.

Notice of Appeal

If the applicant disagrees with the determination made by the District Engineer regarding mandatory use of recycled water, they may file an appeal with the General Manager. The appeal shall be filed within 10 days after receiving the determination notice. The written appeal shall request that the General Manager reconsider or overrule the determination and specify the grounds for an appeal. The applicant shall provide a mailing address for service of notices and other information pertaining to the appeal. The appeals process is detailed further in District Code, Section 1.80.050, including filing an appeal to the Board of Directors.

Distinction between District and Customer Facilities

Design criteria for recycled water facilities are divided into two categories – District facilities and customer facilities. District facilities typically are, or will be, owned, operated, and maintained by the District. Typically these are on the upstream side of the water meter (including the meter) and are within public streets, public rights-of-way, or easements. Customer recycled water facilities typically are owned, operated, and maintained by the customer and are downstream of the water meter. The requirements and recommendations in this Guide refer to customer facilities only. For information on requirements for District facilities, refer to District Standards, Section IV Recycled Water System Requirements, Appendix 3.

District Standards

Design and construction of customer-owned recycled water facilities shall conform to CDPH requirements, this Guide, and Section IV of District Standards Procedures, Specifications and Drawings, (Standard Specifications) which is available in Appendix 3 of this Guide. All District requirements for utility services shall be met and all fees paid prior to any approvals.

City Municipal Code Landscape Requirements

Landscapes irrigated with recycled water must conform to the City of Dublin's Municipal Code, Chapter 8.88 Water-Efficient Landscaping Regulations or City of San Ramon's Municipal Code, Title C, Division C4, Chapter VIII Conservation and Landscaping, as amended from time to time.

Plans Approval

Before any new recycled water system is constructed or any existing system is modified, on-site plans prepared by the customer shall be approved by the District. Approval will be contingent upon evidence that all applicable design requirements for a recycled water system are satisfied and that the system as designed can be operated in accordance with the District's *Recycled Water Use Guidelines and Requirements* and Standard Specifications. While the District reviews plans, the customer is responsible for meeting all requirements, even those requirements not shown on the approved plans.

District staff is available to meet and review preliminary plans with the applicant and the agency responsible for land use entitlement (City of Dublin, City of San Ramon, City of Pleasanton, Alameda County or Contra Costa County). The procedure is as follows:

- Applicant prepares and submits an Application for Services and Recycled Water Service - Supplemental Information form, which is located in Appendix 4 of this Guide.
- Applicant submits plans with the above application.
- Applicant submits plan check fees.
- Applicant submits recycled water use license application.
- The District reviews the plans and establishes the conditions for approval.

Information Required on Plans

The following is a list of the information required on the plans of every on-site recycled water system. Note that compliance with every item on this list does not guarantee that the plans will be approved, since regulations and policies may change and some sites may require additional provisions.

1. During plan checking, submit two (2) sets of full-size Improvement Plans, with a minimum drawing size of 22 inches by 34 inches.

2. Show all mains in plan and profile, with services and laterals in plan.

3. Show all existing and proposed fire hydrants, valves, and other miscellaneous appurtenances for water systems. Specifically distinguish commercial fire hydrants.

4. Show all existing and proposed backflow preventers, valves and other miscellaneous appurtenances for both potable water and recycled water systems.

5. Show all existing and proposed valves and other miscellaneous appurtenances for recycled water systems.

6. Show all existing and proposed potable and recycled water mains and storm and sanitary sewers in the vicinity of any proposed potable water and/or recycled water facilities.

7. Show all required easements.

8. Plan and profile drawing scale shall be at least 1 inch equals 40 feet.

9. Provide an overall plan view of the entire proposed potable water, recycled water, and sewer line system, shown on one sheet with a drawing key for subsequent plan and profile sheets. In addition, show entire single utility on single sheets.

10. Improvement Plans shall include a location map showing the area to be served relative to established public roads**.**

11. Improvement Plans shall include a note that states, “Work shall comply with the Standard Procedures, Specifications, and Drawings of Dublin San Ramon Services District.”

12. When service utilities and layouts are not presented clearly on Improvement Plans, the District may require enlarged details to be provided.

13. Specifically identify utility poles, fences, street lights and trees on Improvement Plans.

14. Improvement Plans must show all proposed utilities and improvements and shall be substantially complete to the satisfaction of responsible agencies. “Water Only” or “Sewer Only” plans will not be approved by the District Engineer.

15. Show location and type of all strainers, pressure regulating valves, and master valves.

16. Show location of all water pipelines (including potable and well lines) crossing the site. If space does not permit this information to be placed on the irrigation plans, then show this information on a separate site or utility plan. Exception for an existing irrigation system converting to recycled water: although it may not be possible to show the location of all water pipelines at this

type of site, all locations where future recycled water piping shall be separated from the potable water piping shall be clearly indicated on the plans.

17. Show location of all drinking fountains, outdoor eating areas, and other public facilities supplied with recycled or potable water service. Public facilities include but are not limited to restrooms, snack bars, swimming pools, wading pools, decorative fountains, and showers. Show the pipelines feeding all of these facilities.

18. Show locations of any wells, lakes, ponds, reservoirs, or other water impoundments located on the site or within 100 feet of the site, and indicate the type of water source.

19. Indicate that the separation between potable and recycled water lines meets minimum requirements. Show sleeving where recycled water pipelines cross over potable water pipelines.

20. All sites using recycled water shall post clearly visible signs conforming to the District signage standards. Show proposed sign locations on plans.

    - For many sites, typical locations for signs are at the properly line near crosswalks, at driveway entrances, and at outdoor eating areas.
    - For streetscapes (parkways, frontage, or backup landscaping), place signs at street corners and entranceways as appropriate to notify passersby and site users.
    - For medians, place a sign at the beginning and end of every median; for longer median areas, place another approximately equidistant from the ends of the median.
    - For decorative fountains, ponds, and other water features, see the Recycled Water Use Site Signage Guildelines section of this Guide.
    - List any existing meters serving the irrigated site; include demand (GPM) and pressure (PSI) requirements.

Recycled Water Use License

All recycled water customers shall obtain a Recycled Water Use License (License) from the District prior to receiving recycled water. The License will be issued only after all of the conditions set forth in this Guide are met. If requirements and conditions are not followed after licensing, the District may revoke the License and terminate recycled water service.

When recycled water systems are found to be in violation of requirements, the District will direct the customer to mitigate the violation(s). After a reasonable mitigation period, the District will schedule a site inspection to ensure compliance. Failure to comply may result in termination of recycled water service.

Obtaining Recycled Water Service

The procedure for obtaining recycled water service for a new facility is slightly different than for an existing facility and each procedure is discussed in more detail below.

"New" Recycled Water Systems

Plans for recycled and potable water service shall be properly coordinated to ensure separation of the two systems. Therefore, the project planner should apply for recycled water use at the same time as, and in conjunction with, all other District services.

The procedure for obtaining recycled water service is essentially the same as for other District services, with some minor additions. Design and construction of both District-owned and customer-owned recycled water facilities shall conform to Section IV of *the District Standard Procedures, Specifications and Drawings* (District Specifications). All District requirements for utility services shall be met and all fees paid prior to any approvals.

Below describes the typical procedure for obtaining recycled water service and should be read in conjunction with the flow chart and checklist in Appendix 4.

Planning Phase

District staff is available to meet and review preliminary plans with the applicant and the agency responsible for land use entitlement (City of Dublin, City of San Ramon, Alameda County, or Contra Costa County).

- The applicant prepares and submits the Application for Services form and the Recycled Water Service – Application/Supplemental Information form included in Appendix 4. The application shall contain a preliminary plan showing nearby existing District-owned facilities, the proposed point of connection, and the proposed use area.
  - The District will review the plans and establish conditions for approval.

Design Phase

The District requires that applicants design proposed District-owned and customer-owned facilities. The design plans shall be approved by the District before the facilities are built.

- The applicant prepares and submits construction plans for the required District-owned and customer-owned facilities. The applicant also prepares and submits landscaping and irrigation plans, including customer connection drawings prepared in 11 X 17-inch format. Examples of

customer connection drawings are shown in Appendix 4. The District uses these drawings while performing preliminary cross-connection and coverage tests.

- To the extent reasonably feasible, the District will coordinate its review and approval process with the processes of other regulatory agencies, such as CDPH and RWQCB, and provide comments prior to approval by the city or county of jurisdiction.

Construction Phase

After the District approves the design, the applicant obtains required permits and begins construction. All constructed facilities are subject to inspection at any time by the District employees or agents, as well as those of the city and/or county with jurisdiction. General procedures for the construction phase are outlined below (a flowchart is included in Appendix 4).

- The applicant shall construct proposed District-owned and customer-owned facilities in accordance with approved plans and under the inspection of the District's construction inspector.
- If a temporary connection to water is required during construction, the applicant must obtain approval from the District construction inspector prior to connecting to a water supply. Figure 1 below shows an acceptable termporary connection to a potable fire hydrant. Examples of schematics are included in Appendix 5. The applicant shall also install warning signs and tags on customer-owned facilities; samples of warning signs and tags and installation drawings are included in Appendix 6.

Figure 1

- The applicant shall also install warning signs and tags on customer-owned facilities; samples of warning signs and tags and installation drawings are included in Appendix 6.

- Potable service to the site with backflow protection shall be tested by a certified backflow prevention device tester hired by the applicant. The backflow test and certification is required regardless of whether recycled or potable water is used for irrigation. Prior to conducting a cross connection test, the applicant shall submit a passing backflow test report to the District Engineering Department.

- Upon completion of installation of District-owned and customer-owned recycled water facilities and potable water facilities, a cross connection test and coverage inspection shall be performed with the site supervisor present. The District oversees the cross-connection test that is to be in accordance with Section IV of the District Standards, which is typically a shutdown test. The guidelines for conducting a shutdown test can be found in Appendix 7. Items reviewed during the coverage inspection are as follows:
  - recycled water is applied only to landscaped areas,
  - over-spray is not excessive, in accordance with good irrigation management practices, and
  - no contact occurs between recycled water and drinking water fountains, picnic tables, and food handling areas.
- If any corrections are required, the District will provide a punch list. District staff will meet with the site supervisor to review the requirements of the Recycled Water Use License, including ongoing requirements once use begins. After the site supervisor completes this training and executes the License, the District issues the License.

Upon satisfactory completion of all punch list items and issuance of the License, the District removes the temporary potable service (if one is used), sets the recycled water meter, and starts recycled water service.

Retrofit "Existing" Potable to Recycled Water System

Typical procedures for retrofitting existing potable water irrigation systems to use recycled water is discussed below. All District requirements for utility services shall be met and all fees paid prior to any approvals. Assistance by the owner's operations personnel is necessary for all required field work.

Planning Phase

The applicant prepares and submits an application for recycled water service. The application, entitled Recycled Water Use – Application/Supplemental Information Form and the Recycled Water Use License Application Form, forms are included in Appendix 4.

Design Phase

No cross-connections are allowed between the recycled water system and any potable water system. Refer to Section 2B, "Construction Guidelines", subhead "Pipeline Separation Guidelines," of this Guide and the Uniform Plumbing Code for minimum separation requirements between onsite recycled water and potable water systems.

- District staff performs a field inspection with the applicant.
- The applicant prepares preliminary recycled water customer connection drawings. Sample drawings are included in Appendix 4. The District uses these drawings while performing a preliminary cross-connection test and coverage test.
- To the extent reasonably feasible, the District will coordinate its review and approval process with the processes of the governing city.

Retrofits will not be required to change out existing sprinkler heads and green valve boxes. Existing plastic boxes shall have a warning label or nameplate permently attached onto the lid with rivets, screws, or bolts. Warning Label shall read "Recycled Water – Do Not Drink – No Tomar".

Quick couplers will need to meet the requirements noted in Section 2B of this Guide and hose bibs will need to be removed or changed to quick couplers.

Construction Phase

- If the existing potable water backflow device on the property has not been tested within the past twelve months, the applicant shall obtain the services of a certified backflow prevention device tester and certify all required backflow prevention devices.
- Upon approval of construction drawings by the District, the applicant constructs modifications to customer-owned facilities. The District inspects the modifications.
- Upon completion of installation of District-owned and customer-owned recycled water facilities and potable water facilities, a cross connection test and coverage inspection shall be performed with the site supervisor present. The District oversees the cross-connection test that is to be in accordance with Section IV of the District Standards, which is typically a shutdown pressure test. The guidelines for conducting a shutdown test can be found in Appendix 7. Items reviewed during the coverage inspection are as follows:
  - recycled water is applied only to landscaped areas,
  - over-spray is not excessive, in accordance with good irrigation management practices, and
  - no contact occurs between recycled water and drinking water fountains, picnic tables, and food handling areas.
- If any corrections are required, the District will provide a punch list. District staff will meet with the site supervisor to review the requirements of the Recycled Water Use License, including requirements once recycled water use begins. After the site supervisor completes this training and executes the License, the District issues the License for the site.

Upon satisfactory completion of all punch list items and issuance of the Recycled Water Use License, the District removes the temporary potable service (if used), sets the recycled water meter, and starts recycled water service.

Site Prohibitions for All Recycled Water Systems

- **Domestic or Animal Water Supply**
  Recycled water may not be used as a domestic or animal water supply.
- **Restrict Public Access to the System**
  Recycled water irrigation systems shall be installed to restrict public access to prevent the general public from drawing water from the system, such as from blow-offs on strainers. Such connections shall be contained in a lockable colored purple container labeled "RECYCLED WATER - DO NOT DRINK." Public access can also be restricted by the use of valves that operate by means of a recessed key slot or pentagonal heads (such as those typically found on fire hydrants).
- **No Cross-Connection**
  No cross-connections are allowed between the recycled water system and any other water system. This includes direct piping between the two systems, regardless of the presence of valves, backflow prevention devices, or other appurtenances.
- **Drinking Fountains and Outdoor Eating Areas**
  Drinking fountains, outdoor eating areas, and other similar facilities (e.g., snack bars) located within the approved use areas shall be protected from overspray or contact with recycled water. Protection may be accomplished by relocating the irrigation system or relocating or modifying the protected facilities.
- **Protect Aquifers**
  Recycled water irrigation systems shall be designed to prevent irrigation within 50 feet of any domestic water supply well. In addition, recycled water impoundments shall be located at least 100 feet (horizontal separation) from any domestic water supply well.
- **Hose Bibs**
  Hose bibs are not allowed on recycled water systems that are accessible by the general public. Quick couplers shall be installed on recycled water systems that comply with this Gude and the District Standards in areas accessible by the public. Hose bibs on recycled water systems that are not accessible by the public shall be marked with signs with the words, "CAUTION: RECYCLED WATER DO NOT DRINK," and contains the symbol in Figure 2.

Figure 2: Do Not Drink icon

Recycled Water Use Site Signage Guidelines

- **Advisory Signs**
  All sites using recycled water shall post clearly visible signs conforming to the District Standards Drawings W-28B or W-28C found in Appendix 6 of this Guide, and installed per the locations indicated on the approved plans.
  - *Restricted Access Facilities*
    Customers with fenced facilities shall install advisory signs at all entrances. The District may require additional signs on a case-by-case basis.
  - *Non-restricted Access Facilities*
    Advisory signs shall be placed where they can be easily seen. Post signs at the property

line near crosswalks, at driveway entrances, at outdoor eating areas, or as otherwise determined by the District. For streetscapes place signs at street corners as appropriate to notify passersby. Signs shall be placed no further than 1,000 feet apart. For medians, a sign is usually placed at the beginning and end of every median; for longer medians, add another sign approximately equidistant from the ends of the median.

- *Decorative Fountains, Ponds, and Other Water Features*
  Customers shall purchase and install signs permanently in conspicuous places around water features. The District shall be consulted for final approval as to the number and placement of signs.
- *Wording*
  The signs shall include the words, "RECYCLED WATER – DO NOT DRINK," and shall be in conformance with District Standards, Drawings W-28B or W-28C.

- **Obtaining Signs**
  Signs are available for purchase at the District Office permit counter and shall be installed in accordance with the District Standards or mounted in a location and fashion acceptable to the District Engineer or his or her designee.

Potable Water Systems Guidelines

- **Protect Public Potable Water Systems with Backflow Devices**
  A reduced pressure (RP) backflow prevention device is to be installed on potable water service connections, unless an alternative cross connection control method has been approved by DSRSD and the State Water Resources Control Board (SWRCB). Double-check detector assembly (DCDA) are to be installed on fire service lines.

Figure 3: Reduced Pressure Backflow Prevention Device

- **Potable water systems hose bibs**
  Potable water hose bib connections installed near recycled water use areas shall have hose bib vacuum breakers installed.

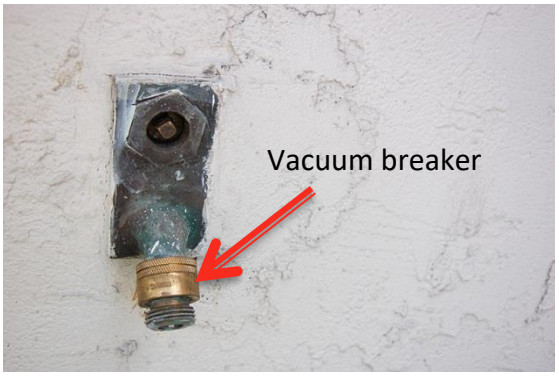


Figure 2: Vacuum Breaker

- **Quick coupling valves**
  Quick coupling valves on adjacent potable and recycled water irrigation systems must have different inlet threads to prevent accidental cross-connection or contamination by interconnecting or interchanging attachments. Keys and attachments shall not be interchangeable. Any wands, hoses, fittings, or other attachments that have been connected to a recycled water system shall not be used on a potable water system.

SECTION 2B

LANDSCAPE IRRIGATION

Recycled Water Irrigation System Construction Guidelines for Customer-owned Facilities

Construction Guidelines

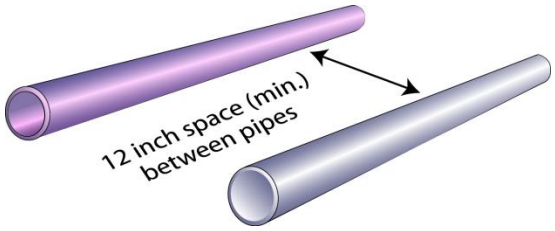
- Construct facilities in accordance with District Standards, Section IV, Recycled Water System Requirements, Appendix 3 and this Guide.

- **Required Temporary Connection to Potable Water Service**: In order to prevent cross-connections, an irrigation system is usually not allowed to receive recycled water until its site has passed a required cross-connection test. This means that the irrigation system shall be supplied from a temporary connection to potable water supply up to and during the cross-connection test as shown in Figure 3 below. After passing this test, the temporary connection shall be removed and the system connected to a recycled water meter. Temporary connections to provide water from the public recycled water system to the on-site recycled water system are prohibited at all times. On occasion, irrigation systems may not be connected to a temporary potable water source because potable water is not available at the site, such as at some streetscapes and medians.

Figure 3

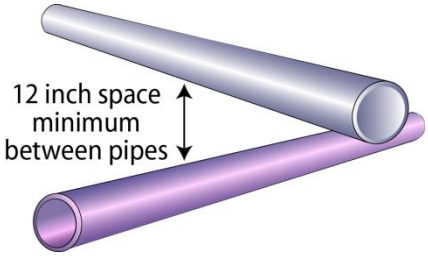
- **Recycled Water Sampling Stations:** If required by the District, one or more recycled water sampling station(s) shall be installed.
- **Backflow Protection:** In most cases, backflow prevention devices will not be required on recycled water service meters. However, at the discretion of the District Engineer, where there is a particular threat to the quality of the recycled water, such as a direct connection to an industrial process or an impoundment of water, the District Engineer may require a backflow prevention device.

Pipeline Separation Guidelines



Horizontal Separation[1]

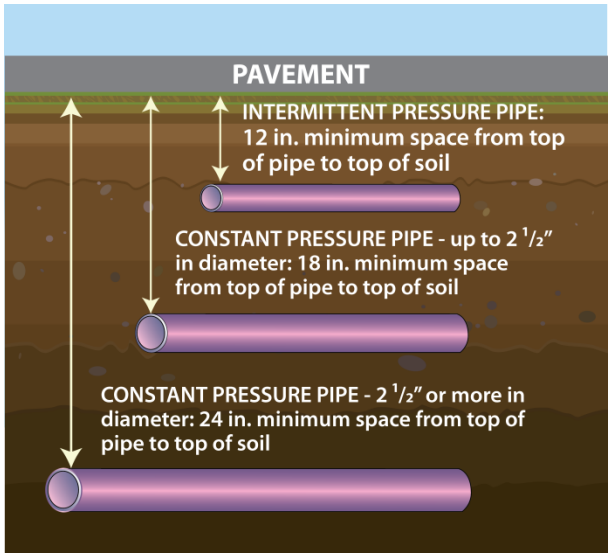
Recycled water pipelines can be installed in the same trench as potable water pipes with a minimum 12-inch horizontal separation, as long as both pipe materials are approved for use within a building in accordance with UPC. UPC's Table 604.1, which details the pipe materials that are approved for use within a building and water distribution lines, is included at the end of this section. No physical contact between the potable and recycled water pipes or appurtenances is allowed. If pipe materials do not meet the requirements, horizontal separation must be increased to 60 inches. Install all potable water pipes above recycled water pipes.



Vertical Separation[2]

Recycled water pipes must be installed at least 12 inches below potable water pipes. The recycled water pipe can be in the same trench as the potable water pipe. Where recycled water and private potable water pipelines cross, install the potable water pipe a minimum of 12 inches above the recycled water pipe.

[1] 2012 Uniform Plumbing Code, Chapter 16, Section 1604.10.4
[2] 2012 Uniform Plumbing Code, Chapter 16, Section 1604.10.4



Pipe Vertical Depth and Trenching:
The minimum depth from finished grade to top of pipe (minimum cover) shall be:

- Intermittent pressure lines: 12 inches
- Constant pressure lines (2 ½ inches and smaller): 18 inches
- Constant pressure lines (3 inches or larger): 24 inches

It is recommended where piping runs under paved areas to increase these dimensions to include the depth of the roadway in order to adequately protect the pipes from traffic load damage.

TABLE 604.1**
MATERIALS FOR BUILDING SUPPLY AND WATER DISTRIBUTION PIPING AND FITTINGS

MATERIAL	BUILDING SUPPLY PIPE AND FITTINGS	WATER DISTRIBUTION PIPE AND FITTINGS	REFERENCED STANDARD(S) PIPE	REFERENCED STANDARD(S) FITTINGS
Asbestos-Cement	X*		ASTM C 296	
Brass	X	X	ASTM B 43, ASTM B 135	
Copper	X	X	ASTM B 42, ASTM B 75, ASTM B 88, ASTM B 251, ASTM B 302, ASTM B 447	ASME B16.15, ASME B16.18, ASME B16.22, ASME B16.26
CPVC	X	X	ASTM D 2846, ASTM F 441, ASTM F 442	ASTM D 2846, ASTM F 437, ASTM F 438, ASTM F 439, ASTM F 1970
Ductile-Iron	X	X	AWWA C151	ASME B16.4, AWWA C110, AWWA C153
Galvanized Steel	X	X	ASTM A 53	
Malleable Iron	X	X		ASME B16.3
PE	X*		ASTM D 2239, ASTM D 2737, ASTM D 3035, AWWA C901, CSA B137.1	ASTM D 2609, ASTM D 2683, ASTM D 3261, ASTM F 1055, CSA B137.1
PE-AL-PE	X	X	ASTM F 1282, CSA B137.9	ASTM F 1282, ASTM F 1974, CSA B137.9
PE-RT	X	X	ASTM F 2769	ASTM F 1807, ASTM F 2098, ASTM F 2159; ASTM F 2735, ASTM F 2769
PEX	X	X	ASTM F 876, ASTM F 877, CSA B137.5, AWWA C904*	ASSE 1061, ASTM F 877, ASTM F 1807, ASTM F 1960, ASTM F 1961, ASTM F 2080, ASTM F 2159, ASTM F 2735, CSA B137.5
PEX-AL-PEX	X	X	ASTM F 1281, CSA B137.10, ASTM F 2262	ASTM F 1281, ASTM F 1974, ASTM F 2434, CSA B137.10
PP	X	X	ASTM F 2389, CSA B137.11	ASTM F 2389, CSA B137.11
PVC	X*		ASTM D 1785, ASTM D 2241, AWWA C900	ASTM D 2464, ASTM D 2466, ASTM D 2467, ASTM F 1970
Stainless Steel	X	X	ASTM A 269, ASTM A 312	

* For building supply or cold-water applications.

** 2012 Uniform Plumbing Code, Chapter 6, Section 604.1

Recycled Water Pipeline Identification Guidelines

- **Pipe Identification**
  All new recycled water piping below or above grade shall be clearly marked and purple-colored with the imprinted words, "CAUTION – RECYCLED WATER." For more information on this item refer to the District Standards, Section IV-B1-1.03 in Attachment 3.

- **Retrofitting Existing Potable Water Lines**
  Any new buried piping added to existing piping at a retrofitted site shall meet the identification and separation requirements for new systems. In addition, any existing piping uncovered for any reason during construction shall be marked according to the above pipe identification requirements. Existing buried piping that will be converted to recycled water use need not be marked unless the piping becomes exposed, such as during installation of new pipelines or maintenance of existing pipe. The exposed section shall be marked as indicated above and in District's Standards, Section IV-B1-1.03 for new piping.

Irrigation System Guidelines

- **Required wye strainer and pressure regulating and/or sustaining valves**
  Unless otherwise directed by the District, all recycled water services shall be equipped with a wye strainer (20-mesh or finer screen), installed as close as practicable to the meter box, and a pressure regulating and/or sustaining valve installed immediately downstream of the strainer. Both of these devices shall be installed in appropriately labeled underground box or boxes as indicated in the following *Irrigation System Identification Guidelines* section. Prior to determining available pressure, designers should take into account the pressure losses incurred by these appurtenances.
- **Appurtenances**
  On-site irrigation systems such as above-ground equipment, pumps, quick coupler valves, control valves, valve boxes, and sprinklers shall comply with this Guide and Section IV of the District Standards for recycled water.
- **Irrigation Design**
  Irrigation systems shall be designed for watering during periods of minimal water use in the District's service area and when public exposure will be limited, such as between the hours of 9 p.m. and 7 a.m. In addition, the design should allow for maximum dry-out time so the area can be used by the public.

- **Irrigation System Configuration and Equipment**
  Irrigation systems shall be configured such that windblown spray remains within the approved use area. Designers shall specify appropriate irrigation devices to minimize overspray. If noticeable overspray, runoff and/or ponding are observed during the coverage test, equipment shall be adjusted or removed and relocated as needed. This requirement does not apply to landscape impoundments such as fountains, ponds, or lakes.
- **Required Filters**

  Filters shall be installed on drip irrigation systems that allows the passage of particulates no larger than 100 microns, per the 2012 Uniform Plumbing Code, Chapter 16, Section 1604.10.5.

Irrigation Controller Systems Guidelines

- **Irrigation Controllers**
  All irrigation controllers shall be capable of dual or multiple programming for multiple cycle start times and a flexible calendar. In addition, automatic irrigation controllers shall utilize evapotranspiration (ET), rain shut-off, and/or soil moisture sensing devices, per City of Dublin and City of San Ramon Municipal Codes.
- **Rain Sensors**
  Irrigating with recycled water while it is raining will cause runoff to storm drains, which is prohibited by the RWQCB and this Guide. The District encourages customers to install rain sensor equipment to prevent this violation.
- **ET Adjustment Factor**
  Per City of Dublin and City of San Ramon Municipal Codes, landscapes using recycled water are considered special landscape areas; the ET adjustment factor for special landscape areas shall not exceed 1.0.

Irrigation System Identification Guidelines

- **System Identification Guidelines Identification Tags and Stickers**
  Identification tags and stickers shall be weatherproof and durable, such as Maxi ID Tags or equivalent. Recycled water identification tags and stickers shall have a purple background with permanent black lettering stating, "RECYCLED WATER – DO NOT DRINK" and "AVISO, AGUA IMPURA – NO TOMAR." Identification tags and stickers shall be installed in all valve boxes, quick couplers, pressure reducing valves, and isolation valves.

- **Irrigation System Valve Boxes**
  Install all remote control valves, isolation valves, pressure reducing valves, and strainers for on-site recycled water systems below grade in a purple valve box. Purple valve boxes and lids are required on new recycled water systems.

  Valve boxes shall have a warning label permanently molded into or affixed onto the lid with rivets, bolts, etc. Warning labels shall be constructed of a purple weatherproof material with the warning "RECYCLED WATER" permanently stamped or molded into the label, T. Christy 3800 or equivalent.

  Retrofits will not be required to replace existing green valve boxes. Green boxes are to have warning label or nameplate permanently attached onto the lid with rivets, screws or bolts. Warning labels shall read "Recycled Water – Do Not Drink – No Tomar."

- **Quick Coupling Valves:**
  Quick coupling valves shall be made specifically for recycled water use and have the following specifications: one-inch inlet with acme thread body, such as Nelson Model 7645 or equivalent; and key, Nelson Model 7640 or equivalent; brass construction with a maximum working pressure of 200 psi; and a permanently attached and locking cover made of purple rubber or vinyl and imprinted with the words "RECYCLED WATER." Newly constructed sites shall have quick coupling valves installed in purple valve boxes and recycled water identification tags attached to the valve or to the inside of the box so that the tag is clearly visible when the box lid is removed. Retrofit sites will not be required to change out existing green valve boxes, however warning labels or nameplates must be permanently installed onto the lid with reviets, screws or bolts. Warning Labels shall read "Recycled Water – Do Not Drink – No Tomar."

  Any wands, hoses, sprinkler heads, fittings, or other attachments used in conjunction with quick coupling valves shall be labeled with the words, "RECYCLED WATER – DO NOT DRINK." Attachments used in a recycled water system shall not be used on a potable water system and shall be removed when not in use to prevent unauthorized use and accidental consumption of recycled water.

On potable water systems that are retrofitted to recycled water, the quick coupling valves shall be modified to meet standards for recycled water quick coupling valves, as outlined above.

- **Sprinkler heads:**
  Sprinkler heads should be ordered with purple markings or fabricated with purple components. Retrofit projects will not be required to change out non-purple sprinkler heads and bubblers.
- **Other Valves and Devices:**
  - *Isolation Valve*
    On new and retrofitted systems, install isolation valves in a marked valve box with a recycled water identification tag on the valve operator or, if the valve operator is too deep to reach, at the top of the valve box extension.
  - *Remote Control Valves*
    On new and retrofitted systems, install control valves in a marked valve box with a recycled water identification tag on the valve.
  - *Pressure Reducing Valves, Pressure Sustaining Valves, and Strainers*
    On new and retrofitted systems, install pressure reducing valves, pressure sustaining valves, and strainers in a marked valve box with a recycled water identification tag on the valves and strainers.
  - *Pumps, Pump Control Valves, Air/Vacuum Relief Valves*
    If applicable, these devices shall be tagged with a recycled water identification tag.
  - *Recycled Water Backflow Prevention Devices*
    Backflow prevention devices installed on recycled water service lines shall be tagged with a recycled water identification tag.

Site Construction Inspections

The RWQCB requires that the District conduct on-site inspections during the construction phase to ensure the materials, installation, and procedures are in accordance with the approved plans, specifications, and all applicable regulations. District staff shall have unrestricted access at reasonable hours to conduct site inspection during all phases of construction.

Cross-Connection Test

District staff generally conducts the required cross-connection test; however the user may hire an AWWA or NCBPA Certified Cross-Connection Specialist to perform the test, provided that the District approves and a District representative is present during testing. The site shall pass the cross-connection test before connection to the District's recycled water system. This test ensures the absolute separation of the recycled and potable water systems. If a cross-connection is found, the customer shall locate and eliminate it prior to scheduling a follow-up cross-connection test with the District. The site supervisor

shall be present at the test. Tests shall be done with potable water charging the irrigation system. The cross-connection test procedure is contained in Appendix 7.

Coverage Inspection

Customers are responsible for minimizing overspray, runoff, and ponding from their recycled water irrigation systems. To ensure compliance, District staff shall inspect the on-site system and conduct a coverage test prior to connection to the District's recycled system. The customer or customer's representative shall be in attendance and have persons in attendance capable of making system adjustments. If modifications to the system (other than minor adjustments) are required, the customer will be notified in writing. Any required modifications to the system shall be made prior to connection to the District's recycled water system. All modifications to the system are the responsibility of the customer, and the customer shall pay all costs associated with such modifications.

Final Inspection and Approval

Before the recycled water irrigation system is connected to recycled water, the District will perform a final inspection to ensure all requirements have been met. The District inspector will check to see that proper equipment was used and that all required tags, labels, and signs are in place and will then complete the Recycled Water Customer Connection Site Inspection Report form, Appendix 7. In addition, final approval will not be granted until all fees have been paid, and customer connection drawings in 11 X 14-inch format and acceptable backflow test report forms have been submitted to the District.

The District shall grant final approval before recycled water can be supplied to the site. Final approval will be granted when construction has been completed in accordance with the following conditions:

- ✓ Plans and specifications approved;
- ✓ Application for recycled water service submitted and accepted;
- ✓ Coverage inspection performed;
- ✓ Customer connection drawings submitted and approved;
- ✓ Cross-connection tests performed at applicable sites;
- ✓ Acceptable test report forms for all on-site backflow prevention devices submitted;
- ✓ All fees paid;
- ✓ Final on-site inspection and complete the Recycled Water Customer Connection Site Inspection Report, Appendix 7;
- ✓ Recycled Water Use License obtained; and
- ✓ All other requirements met satisfactorily.

Upon final approval, the District will authorize the installation of the recycled water meter. The District will forward to SWRCB a copy of all tests, inspections, and backflow test reports as well as notification that recycled water service has started. During the lifetime of the recycled water system, the District will periodically inspect the recycled water system to ensure compliance with all applicable regulations.

Record Drawings

The customer or customer's contractor shall prepare record drawings to show the recycled water irrigation system as constructed. These drawings shall include all changes in the work constituting departures from the original contract drawings, including those involving both constant-pressure and intermittent-pressure lines and appurtenances. All conceptual or major design changes shall be approved by the District before implementing the changes in the construction contract. The recycled water irrigation system record drawings shall be submitted to the District within 90 days of the site receiving recycled water.

Record drawings shall be submitted in TIF format or as a digital vector file on CD-ROM or USB flash drive. Digital raster copies (JPG, BMP, PNG formats, etc.) are not acceptable. The digital vector files shall be in AutoCAD 2007(or higher) drawing format. Drawing units shall be decimal with a precision of 0.00. Angles shall be in decimal degrees with a precision of 0.00. All objects and entities in layers shall be colored. All layers shall be named in English; abbreviations are acceptable. All submitted map drawings shall use the Global Coordinate System of USA, California; NAD 83 California State Plans, Zone III; and U.S. foot.

SECTION 2C

LANDSCAPE IRRIGATION

Monitoring, Operation and Maintenance

As a user of recycled water for irrigation or water features, the customer agrees to comply with this section of the Guide, which outlines required site monitoring and general recommendations for system operation and maintenance.

MONITORING

Recycled Water Use License

Prior to receiving recycled water service, the customer shall obtain a Recycled Water Use License from the District. The District will issue a License after the conditions have been met in Sections IIa and IIb of this Guide. The License allows the customer to use the District's recycled water providing they follow the terms and conditions within the license and this Guide. A copy of the License can be found in Appendix 8.

Site Supervisor Designation

The customer or property owner shall select a designated site supervisor. This person is responsible for the use of recycled water on the site and must attend a Site Supervisor Training workshop held by the District. The site supervisor is the primary liaison with the District and represents the property owner. This person must be available to the District at all times, have the authority to carry out any District requirements, be responsible for installing, operating, and maintaining recycled and potable water systems and preventing potential hazards from the use of recycled water. The site supervisor may assign a designee. The site supervisor and his or her designee shall be trained in use of recycled water as required by the District. The customer or property owner shall keep the District informed in writing of designated site supervisor's name and contact information, including address, telephone number, fax number, and email address, at which he or she can be reached 24 hours a day.

Site Supervisor Responsibilities

The site supervisor:

- is responsible for the recycled water system at the site;
- is responsible for operating, maintaining the recycled water system and preventing potential violations;
- ensures that there are no cross-connections between potable and recycled water systems;
- shall be present at all cross-connection tests;
- shall inform the District of all failures, violations, and emergencies involving the site's recycled or potable water systems;
- is expected to know the provisions contained in this Guide and the California Code of Regulations, Title 17 and Title 22, relating to the safe use of recycled water and the maintenance of accurate records;
- is expected to know the basic concepts of backflow and cross-connection prevention, system testing, and related emergency procedures;
- is responsible for training site personnel on the proper uses of recycled water;
- shall conduct routine inspections of the site and submit self-monitoring reports to the District as specified by the site's Recycled Water Use License.

Site Supervisor Training

The site supervisor must attend the next available DSRSD Site Supervisor Training workshop after the site receives recycled water service. The District provides this training to help site supervisors understand and carry out their responsibilities.

Personnel Training

The site supervisor is responsible for training all personnel involved with recycled water so they are familiar with the information in this Guide. If a third party landscape contractor is hired to perform irrigation system repairs and landscape maintenance, the site supervisor, property manager, and/or property owner shall ensure the landscape contractor personnel receive recycled water use training as well. Site personnel and landscape contractor personnel may attend the District's Site Supervisor Training workshop held periodically to satisfy this requirement.

At a minimum, the training program shall convey the following information:

- DSRSD recycled water, although highly treated, is non-potable and must never be used for human consumption.
- Regulations prohibit ponding, wind-blown spray, and runoff of recycled water.
- Working with recycled water is safe if common sense is used and appropriate regulations are followed.
- State law prohibits any cross-connection between the recycled water and the potable water systems.

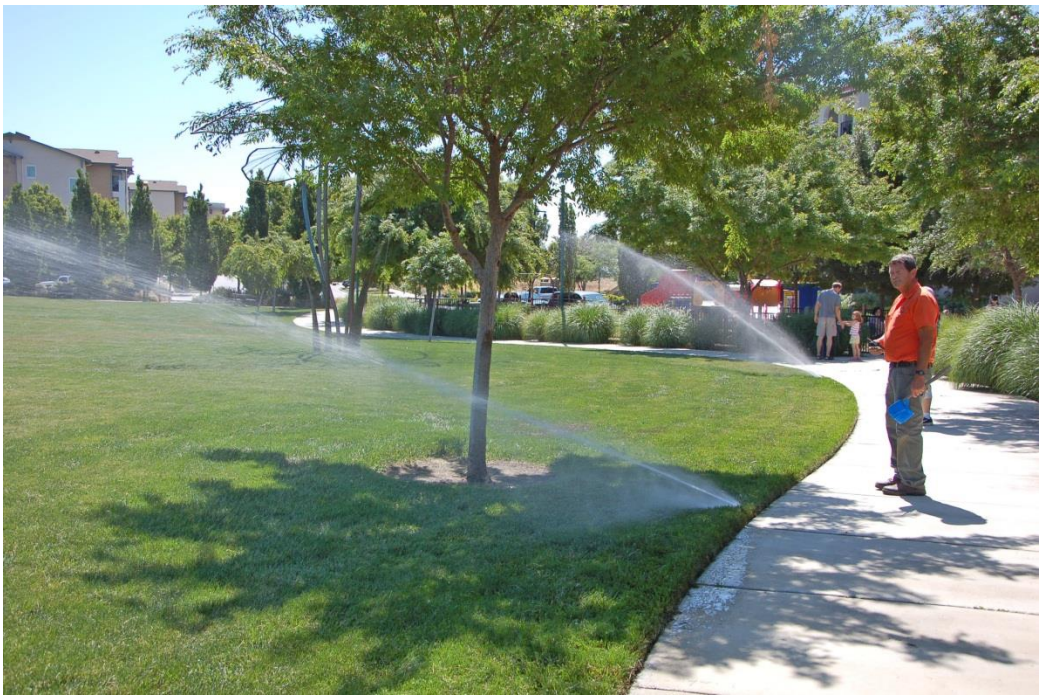
Training programs shall also instruct personnel in proper procedures for reporting unauthorized discharges, identifying and correcting cross-connections, and modifying the system in the event of an earthquake or other disaster. It is important to train new employees before they begin working on the recycled water system and to remind all employees of proper procedures on a regular basis, such as at safety or tailgate meetings.

Site Supervisor or Ownership Change

If the property is transferred to a new owner or tenant, or a new site supervisor or landscape company becomes responsible for system maintenance, the customer must notify the District immediately. After a change in site supervisor or ownership, the customer shall obtain a new Recycled Water Use License and the new site supervisor shall attend the next available Site Supervisor Training workshop held by the District.

Self-monitoring Reports

Recycled water customers shall routinely monitor their sites and submit Recycled Water Use Self-Monitoring Reports to the District in the frequency noted in the License, refer to Appendix 8 to view an example of a Recycled Water Use License that details self-monitoring reporting requirements for a typical recycled water use site. The District Engineer may change the required frequency of monitoring and reporting to ensure that the customer is complying with the License. The site supervisor must keep records of all incidents, repairs, system upgrades, and modifications done during the reporting period in order to complete the reports. The site supervisor, or a designated representative, must sign the report and submit it to the District by email, fax, or postal mail. The Recycled Water Use Self-monitoring report is available online at www.dsrsd.com and can also be found in Appendix 8.



Site Inspection

The District must perform periodic inspections of recycled water use sites to comply with its General Water Reuse Permit, issued by the RWQCB. District staff will inspect the site for the items listed in the Recycled Water Use Inspection Report Form in Appendix 8.

Cross-connection Tests

The customer's on-site recycled water and potable water systems are subject to cross-connection tests as deemed necessary by the District to ensure there are no cross-connections present. Dual-plumbed sites are subject to annual cross connection inspections and a cross connection test once every four years. The District will perform the cross-connection test procedure noted in Appendix 7.

Records

The customer shall have a copy of the Recycled Water Use License available for inspection by the RWCQB and CDPH at all times.

Recycled Water Use Signs

Customers shall replace recycled water signs when they are damaged or become too faded to read. Customers may purchase the signs directly from the District or have them made in accordance with the District Standards Drawings W-28 and W-29 in Appendix 6. For installation requirements, see Section 2A, "Plan Preparation, Submittal and Review," subhead "Recycled Water Use Site Signage Guidelines," of this Guide.

Valve Tags

Customers must immediately replace missing recycled water use tags on valves and quick couplers or when tags become illegible.

OPERATION AND MAINTENANCE

Interruption of Service

Due to unforeseen conditions that are beyond the District's control, temporary or permanent interruptions to recycled water service may occur to protect District facilities or public health and safety.

Regular Preventive Maintenance

The site supervisor shall perform preventive maintenance to ensure that the recycled water system remains in compliance with the requirements of the customer's License. As part of a preventative maintenance program, the site supervisor should:

- Regularly inspect the entire recycled water system, including sprinkler heads, drip irrigation system emitters, spray patterns, piping and valves, pumps, storage facilities, controllers, etc. Immediately repair all broken sprinkler heads, faulty spray patterns, leaking pipes or valves, or any other condition that violates recycled water use requirements.
- Check all recycled water identification signs, tags, stickers, and above-grade pipe markings for proper placement and legibility. Replace damaged, unreadable, or missing signs, tags, stickers, and pipe markings.

- Check spray patterns to minimize ponding, runoff and wind-blown spray. If ponding or runoff is found, adjust sprinkler heads to prevent further ponding or runoff and note the affected areas in the self-monitoring report form. According to the Alameda County Mosquito Abatement it only takes 3-5 days for mosquitos to breed in ponded water (recycled or potable) during the summer months. If there is evidence of mosquitos breeding at your site immediately eliminate the ponded water. If you need further assistance you may contact the Alameda County Mosquito Abatement District online at www.mosquitoes.org or by phone at (510) 723-7744. San Ramon customers may contact Contra Costa Mosquito & Vector Control District online at www.contracostamosquito.com or by phone at (925) 685-9301.
- Establish and maintain an accurate record keeping system of all inspections, modifications and repair work.

Watering Times

Site Supervisor must schedule watering periods to minimize human contact with recycled water and maximize efficient production and distribution by the District. Typically, watering between 9 p.m. and 7 a.m. will accomplish these objectives. The District may establish different or additional restrictions depending on site and distribution system conditions. Spray and rotor irrigation is prohibited between the hours of 7 a.m. to 9 p.m. unless the irrigation is being supervised by qualified personnel or the area is fenced off and signs posted to inform the public that recycled water is in use. Drip or bubbler irrigation may occur anytime throughout the day providing there are no breaks in the system and there is no runoff to nearby storm drains.

Application Rate

To minimize runoff, apply recycled water at a rate that does not exceed the infiltration rate of the soil. Per City of Dublin and City of San Ramon Municipal Codes, the ET adjustment factor for recycled water use areas shall not exceed 1.0.

Potable Water Systems Backflow Prevention Assemblies

The onsite potable water system(s) must be protected by an approved backflow prevention assembly at sites using recycled water, unless alternative cross connection control methods have been approved by DSRSD and SWRCB. An approved assembly must be installed downstream of and immediately next to the onsite potable water meter(s) and fire service connection(s). Refer to District Standards, Section II-A10, Backflow Prevention, for the type of assembly to use and installation requirements.

All backflow prevention devices must be tested annually. The customer is responsible for seeing that testing is done by a certified tester that is on the District's Certified Testers List. Submit test results to the District by the annual test due date for each device.

Irrigation System Modifications

The District authorizes the use of recycled water only in the specific areas so designated on approved customer connection drawings. Customers shall not expand or change the area of recycled water use without the District's prior approval. This includes converting any piping used for recycled water back to potable water, such as switching from a recycled water system to a backup potable water system. In addition, if potable water service is located anywhere on the same site or parcel as the designated recycled water use areas, no changes in the potable water system may be made without the District's prior approval.

Impoundments

Recycled water can be used for a variety of impoundments, including golf course ponds, decorative fountains, and stream-flow augmentation. When managing water features, whether potable or recycled, the biggest consideration is minimizing the potential for algae growth. The customer should develop a maintenance program, including adequate aeration, circulation, and chlorine application, to prevent algae growth.

Operational Problems Notification

In the event of a break in the system, low pressure, low flow, or poor water quality, the customer shall notify the District immediately. District staff may help identify the problem and assist the customer in developing and implementing a solution.

Emergency Response

A copy of Section 3, Emergency Procedures, shall be present on-site at all times and staff shall receive training on these procedures. Immediately implement the appropriate Emergency Response Plan after an unauthorized discharge, disaster, or cross-connection incident.

SECTION 3

Emergency Procedures

Unauthorized Discharge

Customers shall make every effort to contain any unauthorized discharge of recycled water so that the water does not reach a storm drain or waterway.

Less than 50,000 gallons

In the event that a customer becomes aware of a discharge of recycled water the customer shall isolate that section or unit of the recycled water system immediately in order to secure the discharge. The customer shall estimate the amount discharged and if it is less than 50,000 gallons the customer shall document the incident and submit it to the District within five days of the discharge. You may go online to complete the Recycled Water Discharge Report form at www.dsrsd.com and click on the "Services" tab and then the "Recycled Water Discharge Report" form. Complete the form and then click on submit. If you would prefer to complete the Recycled Water Discharge Report form and submit via email to rwreporting@dsrsd.com, this form is also available in Appendix 8. If unable to electronically send the discharge report form it can be submitted by mail to DSRSD, Attention: Levi Fuller, 7399 Johnson Drive, Pleasanton, CA 94588.

50,000 gallons or more

If a significant unauthorized discharge of 50,000 gallons or more of recycled water discharges to waters of the state (per California Water Code, Section 13529.2) immediate notification is required and the following steps shall be followed:

Immediately:

- Site Supervisor shall immediately turn off the recycled water system
- Report discharge to the District's Customer Service Department (925) 875-2057
  After business hours call Alameda County Sheriff Dispatch (925) 462-1212
- Contact the respective city's or county's storm water department to report the unauthorized discharge:
  - City of Dublin Clean Water Program (925) 833-6650
  - City of San Ramon (925) 973-2800
  - Contra Costa County Public Works (925) 313-2000
  - City of Pleasanton Urban Runoff Division (925) 931-5500
  - Pleasanton Police After Hours (925) 931-5100

Follow Up:

- Submit a written report to the District within three business days. The written report must include:
  - ✓ Location of discharge
  - ✓ Date and time thereof
  - ✓ Volume of discharge
  - ✓ Actions taken to stop the discharge
  - ✓ Corrective actions taken to repair the cause of the discharge.

Disasters and Damage

In case of earthquake, flood, fire, major freeze, construction accident, or other incident that could cause damage to the recycled or potable water systems, the site supervisor must inspect the domestic and recycled water systems for damage as soon as it is safe to do so.

1. If either system appears damaged, shut off both the domestic and recycled water systems at their points of connection.
2. If the site supervisor cannot inspect the site and damage is expected, then shut off both the domestic and recycled water systems at their points of connection to the water meter.
3. The site supervisor must immediately contact the District for further instructions.

To prevent contamination, damage, or a public health hazard, the customer may make emergency modifications or repairs without the District's prior approval. As soon as possible after the modification (but within three days), the customer must notify the District of the emergency modifications and file a written report.

Cross-connections

The site supervisor must immediately notify the District of any failure or cross-connection between the recycled water and potable water systems; whether or not he or she believes an incident has occurred. The site supervisor must also notify the District of any incident that might occur because of any action customer personnel might take while operating the recycled water or potable water systems. If there is any doubt whether an incident has occurred, the site supervisor must report each occurrence to the District so its staff can decide if further action is needed.

If contamination of the potable water system is suspected or known due to cross-connection, backflow, or other incident on the customer's premises, the customer, at its sole expense, must immediately invoke the Emergency Cross-connection Response Plan described below:

Emergency Cross-connection Response Plan

1. Immediately notify the following agencies:

   - District's Customer Service Department (925) 875-2057
     After business hours call Alameda County Sheriff Dispatch (925) 462-1212
   - Department of Public Health (510) 540-2151

   A written notice to the District's Engineering Department must follow the verbal notification within 24 hours. The written notice must explain the nature of cross-connection, the date and time it was discovered, and the steps taken to mitigate the cross-connection(s).

   If significant accidental recycled water discharge (50,000 gallons or more) enters the storm drain system, also notify the city or county of jurisdiction. For contact information refer to Section 3, "Emergency Procedures" of this Guide.

2. Immediately shut down the recycled water supply to the facility.
3. Keep the potable system pressurized and post "Do Not Drink" signs at all potable water fixtures and outlets.
4. Provide bottled water for building occupants until the potable water system is deemed safe to drink.
5. Identify the cause and location of backflow and eliminate the cross-connection(s).
6. Samples will be collected from the potable water system and a 24-hour bacteriological analysis will be performed on the samples. Water samples will be collected and analyzed by the District. The customer will bear the costs of sample collection and analysis.
7. The District will conduct a cross-connection test procedure as identified in Appendix 7 of this Guide to verify all cross-connections were eliminated.
8. If the bacteriological analysis conducted in Step 6 is positive, chlorinate the potable water system, maintaining a chlorine residual of at least 50 mg/L for 24 hours. Otherwise proceed to Step 10.
9. Flush the potable water system after 24 hours and perform standard bacteriological analysis.
10. If the results from Step 8 are acceptable, proceed to Step 11. Otherwise, repeat Steps 8-9.
11. Obtain final approval from the District, but do not yet remove the "Do Not Drink" signs.
12. After final approval has been obtained from the District, the District will bring the recycled water system back into service and the customer will remove the "Do Not Drink" signs from all potable water fixtures and outlets.

Note: Customer is responsible for all District costs in the event of an Emergency Cross-connection.

SECTION 4

INDUSTRIAL USES

Dust Control and Surface Washing Uses – Excluding Dual Plumbed Systems

This section is for customers who use recycled water for dust control, soil compaction, surface washing, and other approved uses. Dual plumbed sites are excluded from this section. Permitted customers can obtain recycled water from the District's Water Recycling Facility in Pleasanton at 7399 Johnson Drive, or from recycled water fire hydrants throughout the District's service area. These customers shall first obtain a DSRSD/DERWA Water Reuse Permit (Permit) from the District.

Procedures for Fill Station Customers

Before the first water pickup, customers who wish to use the fill station must schedule an appointment with the DSRSD Environmental Compliance Department to apply for a DSRSD/DERWA Water Reuse Permit, pay any applicable fees, and be trained in mandatory procedures for using the fill station and transporting and using recycled water. Contact Environmental Compliance at 925-875-2334. To view a copy of the permit, please refer to Appendix 9.

Fill Station Customer Requirements

1. The fill station is located at the District's Water Recycling Facility, 7399 Johnson Drive, Pleasanton (adjacent to the DSRSD Regional Wastewater Treatment Facility).
2. Speed limit within the facility is 10 miles per hour.
3. No smoking is permitted on the facility grounds at any time (smoking is a safety hazard due to the presence of flammable gases, including methane).
4. No idling. Please turn off your truck engine while filling or waiting for the filling station.
5. Please do not leave any trash or debris in the fill station area.
6. The driver shall document the date, volume collected, use area, truck license number, and signature on a Water Reuse Release Form each time the recycled water fill station is used.

Figure 2 - A customer hooks up to the District's fill station

Procedures for Recycled Water Hydrant Customers

Purple recycled water hydrants are located throughout the District's service area. The hydrants have unique nozzles that do not fit the District's yellow potable water construction meters. This minimizes the possibility of cross-connections between the potable and recycled water distribution systems. Do not attempt to attach a recycled water meter to a potable water fire hydrant or a potable water meter to a recycled water fire hydrant. Damage will occur and the customer will be responsible for the cost of repairs.

To use recycled water from purple hydrants, customers shall first visit the District Office Permit Counter located at 7051 Dublin Boulevard, Dublin. They will be asked to complete a Construction Meter Use Agreement and a Water Reuse Permit, pay a deposit and any applicable fees. Appendix 9 contains a copy of the Agreement and Permit, as well as a map of recycled water hydrant locations. For more information, call (925) 828-0515 and follow menu prompts to Engineering, Construction Permits.

Recycled Water Hydrant Customer Requirements

1. The District will fax the customer the fire hydrant/construction meter bi-monthly billing form to complete. Customers shall return the form to DSRSD Customer Service by fax at (925) 555-1212 or email at customerservice@dsrsd.com by the specified date on the form. Failure to provide Customer Service with the current meter reading will result in an additional field tracing charge.
2. ***Always*** use a purple meter when using a "purple" recycled water fire hydrant. (See Figure 4)
3. ***Never*** attach a purple meter to a "yellow" potable water fire hydrant. (See Figure 5)

Figure 4:
Correct RW hydrant and meter hook-up

Figure 5:
Incorrect RW hydrant and meter hook-up

Tank Truck Guidelines for Transporting Recycled Water

1. Tank trucks shall be equipped with an air gap, see Standards, Drawing W-5, in Appendix 9.
2. All truck owners and/or drivers are required to attend a Site Supervisor Training workshop. DSRSD informs customers of the date, time, and location.
3. Vehicles used to transport recycled water shall be clearly labeled in a prominent location with these or similar words, in English: "Recycled Water - Do Not Drink." Signs and stickers are available at the District for purchase.
4. The Water Reuse Permit shall be available for inspection at all times. The recycled water customer or agent shall carry a copy of the Permit in the truck.
5. Vehicles used to transport and distribute recycled water shall have water-tight valves and fittings, shall not leak, and tanks shall be cleaned of contaminants prior to use. A truck or tank that has contained material from a septic tank or cesspool shall not be used for recycled water.
6. Tank trucks used to transport recycled water should not be used to carry potable water unless the truck has first been thoroughly cleaned and disinfected.

Procedures for Surface Washer Customers

For any customers (including third-party customers) who wish to connect to an onsite recycled water irrigation system through a quick coupler connection and use recycled water for surface washing purposes, the customer shall obtain a Water Reuse Permit from the District Office at the permit counter located at 7051 Dublin Blvd, Dublin. In order to obtain a permit the customer will need to provide the following information to the District and abide by the surface washing guidelines listed in this Guide and the permit:

1. Customer shall show where surface washing is going to occur and a map of where the washing equipment will connect to the recycled water irrigation system.
2. Customer shall provide proof of authorization from the Site Supervisor of the Recycled Water Use Site, granting permission to connect to the irrigation system to perform onsite surface washing with recycled water.

Surface Washing Requirements

1. Wash water shall be contained to within the wash area
2. Recycled water shall not be discharged to storm drains or waters of the state.
3. Recycled water shall not be heated prior to use

4. Recycled water shall not come into contact with potable water hose bibs
5. Shut off nozzles shall be used on all water hoses connected to the recycled water pressure washer system.
6. Workers performing the washing, whether it is site personnel or a third party contractor, shall be trained prior to beginning the operation in the safe and proper use of recycled water. District staff is available to provide this training.
7. All equipment (including hoses and where applicable, deionization tank, brushes connected to the recycled water hose and shut off nozzles) that comes into contact with recycled water shall be dedicated and properly labeled for use on recycled water systems only. The equipment shall not be re-connected to a potable water system. Recycled water stickers are available for purchase at the District Office.

Recycled Water Use Guidelines for All the above Uses

1. Recycled water supplied by the District's Water Recycling Facility shall be used only within the DSRSD service area.
2. Never allow recycled water to spray onto drinking fountains.
3. Never apply recycled water where it could contact or enter passing vehicles, buildings, areas where food is handled or eaten, or storm drains.
4. Take adequate measures to prevent overspray, ponding, or runoff from the authorized recycled water use area. Do not irrigate with recycled water or impound it within 50 feet of a domestic (drinking water) well.
5. Install warning signs at adequate intervals where recycled water is used in areas accessible to the public, as required by Section 2A, "Plan Preparation, Submittal and Review", subhead "Recycled Water Use Site Signage Guidelines," of this Guide.
6. Do not put recycled water into any permanent piping system and never connect the tank truck to any part of a potable water system.
7. Do not put recycled water into a storage facility without specific written authorization from the District.

Recycled Water Use Safety Guidelines for All the above Uses

1. Do not drink recycled water of or use it for food preparation. In addition, the truck driver shall notify workers and/or the public when recycled water is being used at a site and tell them not to drink recycled water or use it for food preparation.
2. Apply hand sanitizer or wash hands with soap and potable water after working with recycled water and especially before eating or smoking.
3. Take precautions to avoid contact between food and recycled water while the use site is still wet.
4. Equip truck drivers with an adequate first aid kit. Cuts or abrasions should be promptly washed, disinfected, and bandaged.
5. Supply safe drinking water for workers. Where bottled water is provided, the water should be in contamination-proof containers and protected from recycled water and dust.
6. The operation shall be conducted in a way that minimizes exposure to workers.
7. The operation should be conducted in a manner to minimize misting and spraying.
8. The operation should be conducted in an area away from the general public.

SECTION 5

Reserved for Dual Plumbed Systems

(Under Development)

SECTION 6

Recycled Water Use License Terms and Conditions

License and Fees

The Regional Water Quality Control Board (RWQCB) requires the District to establish procedures to license, track, monitor, inspect, and keep records for all facilities using recycled water within the District's service area. The Recycled Water Use License (License), Water Reuse Permit (Permit) and this Guide outline these procedures. The License and Permit constitutes permission for the customer to use recycled water in conformance with all District standards, codes, ordinances, policies and the *Recycled Water Use Guidelines and Requirements*, including any special site-specific requirements that may be identified.

Recycled water customers are responsible for payment of all application fees, capacity reserve fees, and monthly user and commodity charges in accordance with the District's ordinances, Code, and Rate and Fee Schedule, as they may be periodically modified.

District Authority

The District is the entity responsible for enforcing the rules and regulations for the end uses of recycled water. Customers may also need to submit plans for a recycled water project to city or county departments or other agencies that have the authority to issue permits and enforce other requirements, such as plumbing, permits, building requirements, and planning criteria.

The recycled water rules and regulations enforced by the District are established by the RWQCB and California Department of Public Health (CDPH). Most of these regulations are set forth in the California Code of Regulations and by the Counties of Alameda and Contra Costa. All facilities using recycled water shall be designed and operated to meet the standards of the governing codes, rules, and regulations. The resolutions, policies, and ordinances of the District shall govern in the event of any conflicts with information included in the *Recycled Water Use Guidelines and Requirements*. Violations of these requirements are subject to prosecution to the fullest extent allowed by law.

The District maintains and operates the recycled water system and treats the recycled water to a quality that is appropriate for its use. As the recycled water supplier, the District reserves the right to limit the volume, pressure, and flow rate of water delivered to its customers.

Enforcement

Compliance with the Recycled Water Use License, Water Reuse Permit, and this Guide (including, but not limited to, self-monitoring and satisfactory District inspections) are conditions for receiving recycled water service.

If a customer is routinely out of compliance, the District may increase the frequency of inspections and/or self-monitoring reports, or require mandatory attendance at the District's next available recycled water use training workshop. Depending on the frequency and degree of non-compliance and on the potential danger to public health as determined by the District Engineering Department, service to the site may be terminated until corrections are made by the site supervisor. Right to terminate service is further detailed in this section, below.

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under the *Recycled Water Use Guidelines and Requirements* is subject to enforcement procedures and penalty as outlined in Title 1, Chapter 1.030 of the District Code, provisions in the Recycled Water Use License and Water Reuse Permit, and any related ordinances approved by the District Board of Directors.

Amendments

From time to time there may be amendments to existing regulations. These amendments will be enforced upon their effective date.

Protecting Public Health

The District reserves the right to take any action that it may deem necessary with respect to the operation of the customer's recycled water system or use of recycled water to safeguard public health.

Suspension of Service and Assessing of Fees

The District has the right and responsibility to suspend recycled water service if any of the conditions set forth in this Guide are not being adhered to properly. The District also may assess fees to reimburse the District for extra staff time required to correct violations of these conditions.

Right to Terminate Service

In the interest of protecting public health, the District reserves the right and has the authority to immediately terminate, without notice, recycled water service to any customer if at any time during construction or operation of the recycled water system, if there is evidence of real or potential hazards such as cross-connections with the potable water system, improper tagging, signage, or marking; or unapproved or prohibited uses.

Severability

If any section, subsection, clause, or phrase of this Guide is determined to be invalid, the remaining portions of these regulations shall remain in effect.

SECTION 7

Definitions

The following is a list of terms that may be found in the *Recycled Water Use Guidelines and Requirements* (Guide), District Standards, or other documents included in this Guide. Whenever these terms (or pronouns used in their place) occur in these documents, the intent and meaning shall be interpreted as follows:

Air gap – A physical separation between the free-flowing discharge end of a water supply pipeline and an open or non-pressure receiving vessel. An approved air gap shall be at least twice the diameter of the water supply pipe measured vertically above the overflow rim of the vessel (in no case less than one inch).

Alameda County Environmental Health Department – The local environmental health protection agency for most areas of Alameda County.

Applicant – Any entity that applies for recycled water service under terms of the appropriate regulations. The approved customer may be a different party than the applicant but must be specifically identified as such in the Recycled Water Use License.

Approved backflow prevention assembly – A device approved by the State of California, which is installed to protect any water supply (recycled, potable, public, private, or on-site) from contamination through backflow of a substance containing a potential hazard.

Approved use – An application of recycled water in a manner and for a purpose designated in a Recycled Water Use License issued by the District and in compliance with all applicable regulatory agency requirements.

Approved use area – A site with well-defined boundaries designated on the approved recycled water customer connection drawings to receive recycled water for an approved use and acknowledged by all applicable regulatory agencies.

California Department of Public Health (CDPH) – Refers to the State of California Department of Public Health, Division of Drinking Water and Environmental Management, Drinking Water Program, San Francisco District Office.

Construction drawings – Drawings of all on-site and off-site potable water, recycled water, and/or sewer mains; and/or potable and recycled water services, irrigation lines, and appurtenances that are under District jurisdiction for the proposed project. Prior to construction, the District Engineer must approve construction drawings.

Construction use – An approved use of recycled water to support approved construction activities, such as soil compaction and dust control during grading.

Contra Costa County Health Services Department, Environmental Health Division – The local environmental health protection agency for most areas of Contra Costa County.

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. This includes direct piping between the two systems, regardless of the presence of valves, backflow prevention devices, or other appurtenances.

Customer – Any person, persons, or firm, including any public utility, municipality, or other public body or institution issued a Recycled Water Use License by the District. The customer may be the owner, tenant, site supervisor, or property manager as the District determines to be appropriate.

Customer connection drawings – Drawings which demonstrate that the recycled water use site will comply with all state water recycling criteria and District Standards. The drawings may be submitted to the CDPH for review and approval. Drawings should identify the approved use areas, main potable and recycled water lines on-site, valves, sign locations, and any special conditions appropriate for the site.

Customer facilities – Designates or relates to facilities owned or operated by a customer downstream of the water meter.

District – The Dublin San Ramon Services District.

District Engineer – The District Engineer of the District or his/her authorized agent or designee.

District facilities – Designates or relates to recycled water facilities up to and including the water meter.

Dual-plumbed systems – Facilities where both recycled water and potable water are present inside a building. For example, a building where recycled water is used for toilet flushing is a dual-plumbed facility. Another example is a building where recycled water is used for industrial processes.

District Board – The Board of Directors of the District, which has the responsibility and authority to establish and enforce District policies and regulations.

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

Inspector – Any person authorized by the District or local health agencies to perform inspections on or off the customer's site before, during, and after construction and during operation.

Intermittently pressurized line – Also known as a "lateral," the pipe section(s) between the control valve and the sprinkler head or drip emitters.

Irrigation period – The time, from start to end of water flow, when a specific area receives direct irrigation, no matter how often the specific area is irrigated; that is, length of time for irrigation water application.

Irrigation use – An approved use of recycled water for landscape irrigation as defined in the Water Recycling Criteria, Title 22, Division 4, Article 4, Chapter 3 of the California Code of Regulations.

Landscape impoundment – A body of recycled water used for aesthetic enjoyment or that otherwise serves a function not intended to include public contact.

Lateral – See "intermittently pressurized line."

Local authority – The entity responsible for enforcing the rules and regulations for the end uses of recycled water. The local authority is typically the water retailer.

Nonpotable water – Water that has not been treated for human consumption in conformance with the latest edition of the United States Public Health Service Drinking Water Standards, the California Safe Drinking Water Act, or any other applicable standards.

Onsite Recycled Water Facilities – Recycled water facilities downstream of the water meter, which are owned and operated by the Customer.

Operations personnel – Any employee of a customer, whether permanent or temporary, or any contracted worker whose regular or assigned work involves supervising, operating or maintaining any portion of on-site facilities.

Overspray – The spray of recycled water outside of the approved irrigation area.

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

Point of connection – The point at which the customer's system ties to the District's system; usually occurs at the outlet on the customer's side of the water meter.

Ponding – 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 use of recycled water.

Potable water – 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.

Rate and fee schedule – The schedule of all rates, charges, fees, and assessments related to the use of recycled water provided by the District, as approved or amended by the District.

Record drawings – Drawings completed under the supervision of the developer's engineer that correctly show all customer and District potable water, recycled water, and sewage facilities as constructed or modified.

Recycled water – Nonpotable water that is treated to the standards for "disinfected tertiary recycled water" as defined in the Water Recycling Criteria, Title 22, Division 4, Chapter 3 of the California Code of Regulations, and used for approved purposes other than drinking water.

Recycled Water Use License – A license issued by the District to the customer that outlines monitoring, self-inspection, reporting, and site-specific requirements. This license is required by the Regional Water Quality Control Board. This license allows the customer to use recycled water in accordance with District Standards, codes, ordinances, and policies; this Guide; and all applicable requirements of regulatory agencies.

Reduced pressure principal (RPP) backflow prevention device – A type of backflow prevention device, usually installed near a water meter, which prevents backflow by a combination of double-check valves and a pressure differential relief valve.

Regulatory agencies – Those public agencies legally constituted to protect the public health and water quality, including but not limited to the California Department of Public Health, the California Regional Water Quality Control Board, the Alameda County Environmental Health Department, and the Contra Costa County Health Services Department, Environmental Health Division.

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

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

Site supervisor – The customer's designated liaison with the District who has the authority to carry out District requirements and to be responsible for installing, operating, and maintaining recycled and potable water systems and preventing potential hazards from the use of recycled water.

Unauthorized discharge – Any release of recycled water that violates the rules and regulations of the District or applicable federal, state, or local statues, regulations, ordinances, contracts, or other requirements.

Violation – Noncompliance with any condition(s) of the Recycled Water Use License by any person, action, or occurrence, whether willfully or by accident.

Water retailer – The local purveyor of recycled water for the specified service area. The water retailer and the local authority may be the same entity.

Water Reuse Permit – A permit issued by the District to customers who use recycled water for dust control and surface washing. Customers who are issued a this type of permit obtain recycled water at the District's water treatment facility, purple fire hydrants that are located throughout the service area, or by quick coupler connections at recycled water use sites.

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

SECTION 8

Appendices

List of Appendices

1. DSRSD Ordinance 301
2. Summary of State Approved Uses
3. Section IV of DSRSD's Standard Procedures, Specifications and Drawings
4. Planning and Permitting Documents
5. Schematics of Temporary Connections
6. Valve Tags and Signs – Examples and Installation Drawings
7. Cross-Connection Test Guidelines and Inspector Approval Form
8. Recycled Water License, Monitoring, and Unauthorized Discharge Notification Forms
9. Recycled Water Construction Meter and Fill Station Users Documents