

Sanitation Districts Nos. 14 and 20 of Los Angeles County

Recycled Water Users Handbook

For Using Recycled Water
Produced at the Lancaster or Palmdale Water Reclamation Plants,
Located in the Antelope Valley

July 2020



**LOS ANGELES COUNTY
SANITATION DISTRICTS**

Converting Waste Into Resources

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LIST OF ABBREVIATIONS

CEQA	California Environmental Quality Act
County	Los Angeles County, California
DDW	California State Water Resources Control Board, Division of Drinking Water (formerly the California Department of Public Health, Drinking Water Program)
EIR	Environmental Impact Report
Handbook	Recycled Water Users Handbook
JOS	Joint Outfall System
LACDPH or County DPH	Los Angeles County Department of Public Health
mgd	million gallons per day
RWQCB or Regional Water Board	California Regional Water Quality Control Board
Sanitation Districts or LACSD	Los Angeles County Sanitation Districts
SCVSD	Santa Clarita Valley Sanitation District of Los Angeles County
SWRCB or State Water Board	California State Water Resources Control Board
WRP	Water Reclamation Plant

1. Introduction

Recycled water is safe and cost effective to use in lieu of drinking water for most non-potable applications, but there are common sense rules that need to be followed for the protection of public health and compliance with regulations. This *Recycled Water Users Handbook* (Handbook) provides information on the general rules, regulations, and guidelines regarding the safe use of recycled water produced by the Los Angeles County Sanitation Districts (Sanitation Districts) particularly Sanitation Districts Nos. 14 and 20 that serve areas in the Antelope Valley. The Handbook complements the Sanitation Districts' *Requirements for Recycled Water Users*, which is provided in Tab 1 of this Handbook. This Handbook includes:

- General information about the Sanitation Districts' water reuse program.
- State and local standards, regulations, and guidelines for the use of recycled water.
- Information on the duties and responsibilities of recycled water purveyors and users.
- Information on operational requirements at reuse sites.
- Information on notification requirements.

An electronic copy of this Handbook can be found online at the Sanitation Districts' Water Recycling Program website at: <http://www.lacsd.org/waterreuse/>. The Handbook should be used along with the Los Angeles Chapter of the California WaterReuse Association's *Recycled Water Urban Irrigation User Manual*, which has more detailed information on water recycling. The *Recycled Water Urban Irrigation User Manual* is available at: <http://www.lacsd.org/civicax/filebank/blobdload.aspx?blobid=11118>. A list of important agency contacts for recycled water use is provided in Tab 2.

2. Background on the Los Angeles County Sanitation Districts

The Sanitation Districts protect public health and the environment through innovative and cost-effective wastewater and solid waste management, and in doing so, convert waste into resources such as recycled water, energy, and recycled materials. The Sanitation Districts are a partnership of 24 independent special districts serving over 5.6 million people in Los Angeles County, California (County). The Sanitation Districts' service area covers over 850 square miles and encompasses 78 cities and unincorporated territory within the County.

The Sanitation Districts construct, operate, and maintain facilities to collect, treat, recycle, and dispose of wastewater and industrial wastes. Individual Sanitation Districts operate and maintain their own portions of the collection system. The Sanitation Districts also provide for the management of solid wastes including disposal, transfer operations, materials recovery, and energy recovery. Local jurisdictions are responsible for the collection of wastewater through local sewers and the collection of solid waste. The 24 Sanitation Districts work cooperatively under a Joint Administration Agreement with one administrative staff headquartered near the City of Whittier. Each Sanitation District has a separate Board of Directors consisting of the mayor of each city within that Sanitation District and the Chair of the Board of Supervisors for County unincorporated territory. Each Sanitation District pays its proportionate share of joint administrative costs.

2.1 Wastewater Management System

The Sanitation Districts' 1,400 miles of main trunk sewers and 11 wastewater treatment plants convey and treat approximately 400 million gallons per day (mgd) of residential, commercial, and industrial wastewater, from which approximately 165 mgd of recycled water is produced and available for reuse in the dry Southern California climate. More information on the Sanitation Districts' wastewater management system is available at:

<https://www.lacsd.org/services/wastewatersewage/default.asp>.

2.2 Joint Outfall System (JOS)

Seventeen of the Sanitation Districts that provide sewerage services in the metropolitan Los Angeles area south of the San Gabriel Mountains are signatory to a Joint Outfall Agreement that provides for operation and maintenance of a regional, interconnected system of facilities known as the Joint Outfall System (JOS). The service area of the JOS encompasses 73 cities and unincorporated territory and includes some areas within the City of Los Angeles and Orange and San Bernardino counties. The JOS system includes the following wastewater treatment plants:

- Joint Water Pollution Control Plant in the City of Carson
- La Cañada Water Reclamation Plant (WRP) in the City of La Cañada Flintridge
- Long Beach WRP in the City of Long Beach
- Los Coyotes WRP in the City of Cerritos
- Pomona WRP in the City of Pomona
- San Jose Creek WRP adjacent to the City of Industry.
- Whittier Narrows WRP near the City of South El Monte

2.3 Santa Clarita Valley

The Santa Clarita Valley Sanitation District of Los Angeles County (SCVSD) serves an area encompassing the City of Santa Clarita and nearby unincorporated territory and operates the Saugus and Valencia WRPs. The recently formed Newhall Ranch Sanitation District of Los Angeles County will serve the proposed residential development to the west of the SCVSD.

2.4 Antelope Valley

Sanitation Districts Nos. 14 and 20 serve areas in the Antelope Valley. Sanitation District No. 14 serves the City of Lancaster, parts of the City of Palmdale and nearby unincorporated territory and operates the Lancaster WRP. Sanitation District No. 20 serves the City of Palmdale and nearby unincorporated territory and operates the Palmdale WRP.

3. Recycled Water Reuse

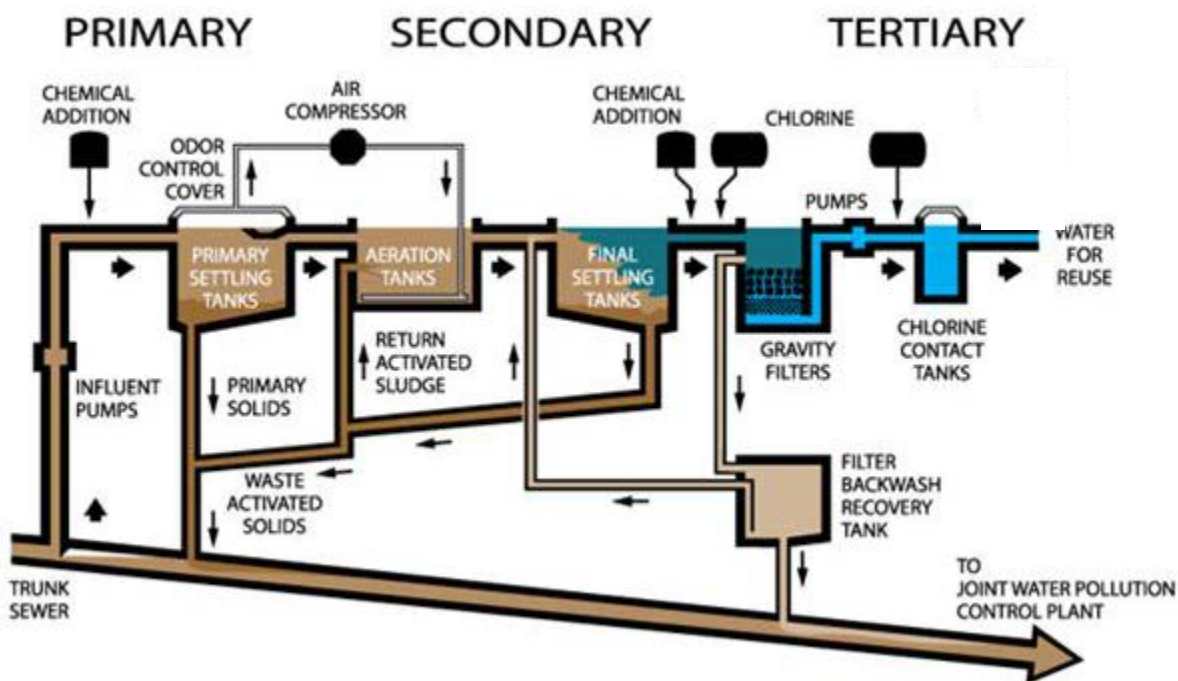
Water recycling is very important in arid Southern California where water must be imported from other parts of the state to meet local water demands. One goal of the Sanitation Districts is to recycle as much water from its treatment plants as possible to help meet the region's water needs. The Sanitation Districts are pioneers in using recycled water with projects launched as early as

1962. Recycled water is used at more than 930 sites throughout the County for uses such as landscape irrigation, agricultural irrigation, industrial processing, recreational impoundments, wildlife habitat maintenance, groundwater replenishment, and other uses. The actual amount of recycled water used and the percentages associated with specific applications vary from year to year depending on annual rainfall and other factors. More information on the Sanitation Districts' recycled water program, specific uses and reuse volumes is available at: <http://www.lacsd.org/waterreuse/>.

This Handbook is for anyone who obtains and/or uses recycled water produced by the Sanitation Districts Nos. 14 and 20 for allowed reuse applications. The Sanitation Districts produce recycled water that undergoes disinfected tertiary treatment to meet standards established by the State Water Resources Control Board's (State Water Board) Division of Drinking Water (DDW)¹ and the California Regional Water Quality Control Board, Lahontan Region (Lahontan Regional Water Board).

3.1 Recycled Water Treatment Process

A water reclamation plant is just like a natural river but in a concrete box. First, materials settle to the bottom or float to the top and are removed (primary treatment). Second, microbes use air to breath while they consume organic material, then the microbes settle out (secondary treatment). Third, inert material filter out leftover particles (tertiary treatment) like sand in the bottom of a river.



¹ On July 1, 2014, the Drinking Water Program was transferred from California Department of Public Health to the State Water Board as the Division of Drinking Water. The Division of Drinking Water regulates public water systems; oversees water recycling projects; permits water treatment devices; supports and promotes water system security; and performs a number of other functions.

3.1.1 Primary Treatment

Just as in nature, when runoff first enters a river, heavier solid particles settle to the bottom while lighter materials float to the top and are carried away. At the treatment plants, long concrete tanks substitute for the river. The heavier solids that settle to the bottom and the lighter materials, like plastic and grease, which float to the top, are respectively called primary sludge and skimmings. The primary sludge and skimmings are removed and undergo further treatment. The remaining wastewater containing dissolved and suspended materials (mostly organic) moves to the second phase of treatment in aeration tanks and secondary settling basins.

3.1.2 Secondary Treatment

As dirty water in a river flows downstream, naturally occurring microorganisms (or “microbes”) feed on the suspended and dissolved organic materials. As the river flows downstream, oxygen naturally enters the water so the organisms can breathe. In the secondary treatment aeration tanks of the treatment plants, air is bubbled through the water to supply oxygen. The same microbes in the wastewater grow as they feed on the organic materials in these tanks. In the secondary treatment settling tanks, the water flow is slowed down so that the microbes can clump together and settle to the bottom, where they are either removed from the process for solids treatment or returned back into the secondary treatment aeration tanks to go through the process again.

3.1.3 Tertiary Treatment

Finally, in a natural river, the clean water soaks into the ground beneath the river and joins the underground water supply. At the treatment plants, the ground is substituted by filters, which remove any remaining suspended materials from the water. Typically, the filters contain layers of anthracite coal, sand, and gravel; the Lancaster WRP uses anthracite and gravel whereas the Palmdale WRP uses cloth filters. The recycled water is then disinfected with chlorine and chloramines to kill any remaining microbes, especially harmful bacteria and viruses. The water is now safe for human contact, recharging groundwater, and a wide variety of other uses.

3.2 Allowed Uses

Recycled water has been proven to be a safe source of water for many different kinds of reuse applications. Because of its high level of treatment, disinfected tertiary recycled water can be used for a broad category of reuse applications as listed below. However, it is important to remember that the State or Regional Water Board issues water recycling permits to the Sanitation Districts and authorizes the specific uses that are approved for the recycled water produced at each treatment plant. Therefore, it is important to check with the Sanitation Districts’ Water Recycling Coordinator at 877-REUSE-83 (877-738-7383) or reuse@lacsdsd.org to find out which uses are allowed in your area.

Uses of Tertiary Recycled Water in California

Irrigation:

- Food crops
- Parks and playgrounds
- School yards
- Residential landscaping

- Golf courses
- Cemeteries
- Freeway landscaping
- Ornamental nurseries
- Pasture for milk animals
- Orchards
- Vineyards
- Fodder and fiber crops

Supply for Impoundments:

- Recreational impoundments
- Landscape impoundments

Supply for Cooling and Air Conditioning

- Industrial cooling towers and evaporative condensers
- Commercial cooling towers and evaporative condensers

Other Uses:

- Groundwater recharge (case-by-case basis)
- Flushing toilets and urinals
- Priming drain traps
- Industrial processing
- Industrial boiler feed
- Fire fighting
- Decorative fountains
- Commercial laundries
- Consolidation of backfill material around pipelines
- Artificial snow making
- Commercial car washes
- Soil compaction
- Mixing concrete
- Dust control on roads and streets
- Cleaning roads, sidewalks and outdoor work areas
- Flushing sanitary sewers

3.3 State and Local Standards, Regulations and Guidelines

A number of regulatory agencies have adopted requirements that must be followed when producing, distributing, or using recycled water.

- The California State Water Resources Control Board's (State Water Board) Division of Drinking Water (DDW; formerly the Drinking Water Program of California Department of Public Health) has adopted strict public health and safety requirements and guidelines to help protect the public from any potential risk associated with recycled water. These requirements include Title 17 and Title 22 of the California Code of Regulations, which can be viewed online

at DDW's Recycled Water Information page on the State Water Board website at: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/RecycledWater.html. Key excerpts are provided in Tab 3 of this Handbook, including the Water Recycling Criteria that establish specific requirements for allowed uses of recycled water.

- The State Water Board oversees the production, conveyance and use of recycled water through its nine Regional Water Boards in California. The Lahontan Regional Water Board issues permits to the Sanitation Districts for the use of recycled water in the Antelope Valley. Copies of these recycling water permits are provided in Tab 4.
- The Sanitation Districts have adopted Water Recycling Ordinances and Requirements for Recycled Water Users. Anyone who obtains and/or uses recycled water produced by the Sanitation Districts must make sure that the use meets all regulations and complies with the conditions in the recycled water permits issued to the Sanitation Districts by the State or Lahontan Regional Water Boards, and with the Sanitation Districts' Water Recycling Ordinances and Requirements for Recycled Water Users. The *Requirements for Recycled Water Users* contain rules on what can and cannot be done with recycled water, how to obtain permission to use recycled water, how to operate and manage sites, information on site inspections and site access, corrective actions, notification and reporting, and record keeping. A copy of the *Requirements for Recycled Water Users* is provided in Tab 1. Copies of the Water Recycling Ordinances are provided in Tab 5.
- The Los Angeles County Department of Public Health (LACDPH) has guidelines and inspection requirements for the use of recycled water, which are provided in Tab 6.

4. Duties and Responsibilities

4.1 Complying with Regulations

It is important for anyone who obtains and/or uses recycled water to be familiar with all relevant regulatory and permitting requirements and to take all necessary steps to comply with those requirements.

4.2 Obtaining Permission to Use Recycled Water

The step-by-step processes for obtaining permission to use recycled water are included in the Sanitation Districts' *Requirements for Recycled Water Users* (Tab 1, Section 5.5 and Tables 1 and 2). One process (Table 1) is intended for anyone who receives recycled water directly from the Sanitation Districts and the other process (Table 2) is intended for anyone who receives recycled water from a recycled water purveyor. Each process table indicates the agencies with which to contact and interact, the documents that must be completed, and who must receive these documents.

4.2.1 *User Agreement*

Anyone who obtains recycled water directly from the Sanitation Districts must enter into a User Agreement for the use of recycled water or an amendment to an existing Agreement with

Sanitation District No. 14 or/and District No. 20 depending on the location of the reuse project (see *Requirements for Recycled Water Users* (Tab 1), Section 5.5). Recycled water purveyors, who provide recycled water produced by the Sanitation Districts to users, must enter into a User Agreement or an amendment to an existing User Agreement with Sanitation District No. 14 or/and District No. 20 depending on the location of the reuse project. It is preferable that the user also enter into a user agreement with the recycled water purveyor to indicate that the user will follow all requirements while using recycled water.

4.2.2 User Application

Prior to obtaining permission to use recycled water, a User Application Form (Application) must be completed and submitted to the Sanitation Districts (see *Requirements for Recycled Water Users* (Tab 1), Section 5.5). The Application is provided in Tab 7. Anyone who uses recycled water produced by Sanitation Districts must fill out the Application. If you plan to obtain recycled water from a recycled water purveyor, contact the purveyor if any additional application process needs to be completed. The Sanitation Districts will verify the information in the Application and send a letter or email conditionally approving the project. The approval is conditional until all of the regulatory steps have been completed. The Sanitation Districts' conditional approval letter or email will include instructions on the conditions under which recycled water use can begin as well as the monitoring and reporting information that will need to be provided to the Sanitation Districts on a routine basis (also see Section 4.8, Record Keeping).

To fill out the Application you will need information on the reuse site(s), uses of the recycled water, staffing and training, water outlets and plumbing fixtures, operational and best management practices, and backflow prevention measures.

4.2.3 Recycled Water System Operation Manual

Although not specifically required, it is recommended that you also prepare a Recycled Water System Operations Manual (Operations Manual; see *Requirements for Recycled Water Users* (Tab 1), Section 5.5). The Operations Manual should provide a description or a checklist of how the reuse site will be operated and maintained to comply with the Sanitation Districts' *Requirements for Recycled Water Users* (Tab 1).

4.2.4 Emergency Cross-Connection Response Plan

As part of the Application, you are also asked to prepare an Emergency Cross-Connection Response Plan (Cross-Connection Response Plan) should cross-connections between the recycled water and potable water systems occur (see *Requirements for Recycled Water Users* (Tab 1), Section 5.5). If the Cross-Connection Response Plan cannot be provided with the Application, then you will need to indicate the date it will be submitted. The Cross-Connection Response Plan should provide a narrative description or a checklist of how you will comply with the guidelines established by the LACDPH. The LACDPH guidelines are provided in Tab 6. A form you could use to prepare the Cross-Connection Response Plan is provided in Tab 8.

4.2.5 Plans and Specifications

Detailed plans and specifications for the recycled water system and connections to the potable water system must be given to, and approved by, LACDPH (see *Requirements for Recycled Water*

Users (Tab 1), Section 5.5). For dual plumbed projects, plans and specifications must also be submitted to and approved by DDW.

4.2.6 Engineering Report

Prior to approval of a reuse project, it is important to make sure that an Engineering Report has been sent to the Lahontan Regional Water and DDW, and that the Sanitation Districts receive a copy (see *Requirements for Recycled Water Users* (Tab 1), Tables 1 and 2). The Engineering Report describes the manner by which a project will comply with the Water Recycling Criteria. The Lahontan Regional Water Board and DDW determine if the report is complete and the start date for recycled water deliveries. The Engineering Reports are typically prepared by the water purveyor or in some cases by the user; the Sanitation Districts will contribute information on the treatment plants. Please check with your purveyor on the status of the Engineering Report for your project. In some cases, an Engineering Report that covers the project may have already been submitted and approved, so no further action is needed. For projects with an existing Engineering Report that propose to either expand their service area or add new sites or uses, the existing Engineering Report needs to be amended and submitted to the Lahontan Regional Water Board and DDW. Guidelines for preparing an engineering report can be found at the State Water Board website:

http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/recharge/ERGU IDE2001.pdf.

4.2.7 California Environmental Quality Act (CEQA)

Prior to approval of the reuse project, it is important to make sure that all the California Environmental Quality Act (CEQA) requirements have been met for your project (see *Requirements for Recycled Water Users* (Tab 1), Tables 1 and 2). The agency responsible for completing the CEQA process will typically be the recycled water purveyor or in some cases the Sanitation Districts. As part of the CEQA process, a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report (EIR) may need to be completed. For more information on CEQA requirements, go to the California Natural Resources Agency website at: <https://resources.ca.gov/About-Us/Legal/CEQA-Supplemental-Documents>.

4.2.8 Pre- and Post-Construction Inspections

Prior to project construction and start-up, County DPH must be contacted to arrange for a preconstruction meeting, site inspections, initial cross-connection and backflow prevention device testing. For recycled water site conversions in its jurisdiction, County DPH must review and approve all design drawings and specs prior to construction, must be present during the cross-connection test, and must issue final approval before the site is fully converted over to the recycled water supply. County DPH must also be present if a reuse site is converted over to a potable supply.

4.2.9 Project Start-up

Once a project has cleared all of its Lahontan Regional Water Board, State Water Board, LACDPH, and CEQA obligations, and the recycled water purveyor or direct user has notified the Sanitation Districts that these obligations have been met, a project may begin recycled water use, provided that the Sanitation Districts have granted approval (see *Requirements for Recycled Water*

Users (Tab 1), Tables 1 and 2). The date of delivery shall be arranged with the Sanitation Districts or the recycled water purveyor, as applicable.

The actual date for recycled water delivery will also depend upon completing the User Agreement or amendment with the Sanitation Districts, and completing the Sanitation Districts' User Application by:

- Providing proof that the Site Supervisor has received training.
- Submitting the Emergency Cross-Connection Response Plan.
- Submitting other information indicated in the Sanitation Districts' conditional approval letter.

4.2.10 Designating a Site Supervisor

Each reuse site must have a designated Site Supervisor (see *Requirements for Recycled Water Users* (Tab 1), Section 5.6). This person is responsible for:

- The proper installation, operation, and maintenance of the recycled water system and all backflow prevention devices on the potable water system;
- Compliance with all requirements in the Sanitation Districts' recycled water permits issued by the State or Lahontan Regional Water Board, applicable laws and regulations, State Water Board and LACDPH guidelines, and the Sanitation Districts' Ordinances and Requirements for Recycled Water Users;
- Preventing potential hazards;
- Minimizing the potential for runoff and overwatering;
- Minimizing fertilizer use at irrigation sites by taking into account the nutrient value of the recycled water;
- Coordinating with the cross-connection control program;
- Supervising work done by other site employees or contractors on the on-site recycled water system; and
- Preserving the recycled water system design drawings in "as built" form.

The Site Supervisor should be someone who is knowledgeable about recycled water practices and the on-site recycled water and potable water plumbing system and has the authority to make sure that operations personnel and contractors comply with all requirements and regulations. The Site Supervisor is the primary means for ensuring the safe and appropriate use of recycled water at the reuse site and is the 24-hour contact person for the reuse site.

4.2.11 Participating in Training

The Site Supervisor must receive appropriate training to assure proper operation of recycling facilities, operations personnel protection, and that the reuse site meets all applicable requirements and regulations (see *Requirements for Recycled Water Users* (Tab 1), Section 5.6). The Sanitation Districts provides the required training for Site Supervisors. Your water purveyor may also provide training, and there may also be training classes offered in the area. Please contact the Sanitation Districts' Recycled Water Coordinator for information on training opportunities, or visit the Sanitation Districts' website for a schedule and registration form at <http://www.lacsd.org/waterreuse/recycledresources.asp>.

4.3 Familiarity with On-Site Recycled Water System and Regulations

There are specific provisions in the Requirements for Recycled Water Users (Tab 1, Sections 5 - 9) that must be followed when installing and operating a recycled water system. The LACDPH may have additional requirements that will be discussed during their required pre-construction meeting. Each Site Supervisor must be familiar with the entire on-site recycled water system and with the applicable requirements and regulations. Some general practices to follow are:

Do's:

- Educate/train operations personnel on the safe use and restrictions of recycled water.
- Apply recycled water for irrigation only at agronomic rates (i.e., no more water than the vegetation needs and the soil can handle).
- Reduce fertilizer application rates due to nutrients in the recycled water.
- Install and maintain signs at all points of entry (pedestrian and vehicular).
- Install and maintain labels and tags on recycled water and potable water systems fixtures.
- Implement best management practices for the protection of public health and the environment.
- Operate the irrigation system:
 - Between 10 p.m. – 6 a.m. if automatically controlled (unless other restrictions apply).
 - At other times, if manually controlled and supervised by a site employee present to make sure the public does not come in contact with the recycled water.
 - At any time, if public access to the reuse site is restricted.
- Prevent runoff from the reuse sites due to overspray from sprinklers, overflow of ponds that contain recycled water, over watering, or broken sprinklers or irrigation lines.
- Quickly repair any breaks in recycled water irrigation or distribution lines and broken sprinklers.
- Use quick couplers instead of hose bibbs.
- Thoroughly wash tools used for the recycled water system before using them for the potable water system.
- Contact the Sanitation Districts if any water system (recycled or potable) modifications are anticipated.
- Be familiar with all of the notification requirements if any of the following has occurred:
 - A recycled water line break, spill, or off-site discharge of recycled water.
 - A non-compliance with the Sanitation Districts' Requirements for Recycled Water Users or recycled water use permits.
 - A cross-connection between the recycled water and potable water systems.
 - Any safety or health issues.
- Assist and cooperate during periodic inspections conducted by the Sanitation Districts or your water purveyor.
- Schedule all required backflow prevention and cross-connection testing.
- Assist and cooperate during periodic backflow prevention and cross-connection testing.
- Develop an Emergency Cross-Connection Response Plan.
- Keep records and as-built drawings up-to-date and accessible.
- Submit all required information and reports.

Don'ts:

- Don't drink recycled water.
- Don't use recycled water to wash hands or any other part of the body.
- Don't cross-connect two dissimilar water systems (recycled to potable).
- Don't allow recycled water to contact drinking fountains or eating areas.
- Don't overwater or over-fertilize.
- Don't allow recycled water to pond or run off-site.
- Don't use recycled water on an unauthorized site or for an unapproved use.
- Don't remove recycled water identification signs, tags or labels.
- Don't put hose bibbs on recycled water systems (unless public access is restricted).
- Don't use the same equipment on both recycled water and potable water systems (for example, quick couplers, etc.)
- Don't significantly modify any recycled water system without prior approval of the Sanitation Districts, your water purveyor, and LACDPH.

4.4 Cross-Connection Testing and Backflow Prevention

A major concern when recycled water is used on sites served with potable water is a cross-connection. A cross-connection is any actual or potential connection between the recycled water and potable water systems, even when separated by an approved air-gap backflow prevention device. There are specific requirements for backflow prevention in the State Water Board's recycled water regulations (see Tab 3). The Sanitation Districts' Requirements for Recycled Water Users also include cross-connection and backflow prevention requirements (Tab 1, Section 5.6).

Anyone who obtains and/or uses recycled water must be sure that an initial and final cross-connection test is conducted based on the requirements set by the LACDPH (see Tab 6) prior to connecting to the recycled water distribution system. This involves submitting a Cross-Connection Plan Approval Application to LACDPH and conducting the testing in the presence of both your water purveyor and the LACDPH, utilizing a specialist who has been certified by the American Water Works Association or a group with equivalent certification requirements. Follow-up cross-connection testing should be conducted when significant modifications have been made to either the recycled water system or potable water system or if problems are discovered during visual site inspections. For dual plumbed systems (see Glossary of Terms for definition), cross-connection inspections must be conducted annually, with actual testing of the recycled water system every four (4) years.

LACDPH follows the following protocol for cross-connection testing. First, the recycled water system is completely drained and depressurized for a period of time determined by LACDPH – this is called the shutdown period. At the end of the shutdown period and while the potable water system is still pressurized to the domestic outlets, all recycled water devices or stations are checked for flow and then the recycled water inlet is checked for backpressure or significant backflow. The potable water system is then shut down, drained, and depressurized for a period of time determined by LACDPH. At the end of this second shutdown period, all potable water fixtures are operated and tested for flow, after which the potable water inlet is tested for pressure or significant backflow

of water. If no cross-connections are discovered, the recycled water system and potable water system are reactivated. A temporary potable water source with backflow prevention is required for all testing and flushing of the recycled and potable water systems prior to final project approval.

Every recycled water use site that will continue to maintain a potable water service must have the potable water supply protected by, at minimum, a reduced pressure backflow prevention device. All approved backflow prevention devices must be maintained and inspected annually by a certified backflow device inspector. This is typically done using a pressure test to verify physical separation between the recycled water and potable water systems. Dye tests can also be used.

4.5 Site Inspections

Each reuse site must be inspected periodically by the recycled water purveyor. The purpose of the site inspection is to make sure the reuse site is in compliance with all requirements and regulations. Site inspections must take place at least once every three (3) years per site or more frequently if requested by the Sanitation Districts. In addition, the Sanitation Districts will also conduct periodic inspections. To help with inspection coordination, your recycled water purveyor must email or fax the Sanitation Districts' Water Recycling Coordinator at least one (1) week prior to conducting a site inspection. At a minimum, the Sanitation Districts must inspect each reuse site at least once every three years if there are no reported violations and at least annually if there are prior violations at the reuse site.

A site inspection report must be filled out for each inspection. Tab 10 includes a sample Site Inspection Report Form, which will be used by the Sanitation Districts. The site inspection report must be signed by the Site Supervisor and the inspector, with copies provided to the Sanitation Districts within 30 days following the end of the quarter in which the inspection was conducted. The Site Supervisor must also keep copies of the inspection reports.

If an inspector finds a non-compliance condition, the Site Supervisor must be notified immediately. The Site Supervisor must immediately take corrective actions as described in Section 4.6, Corrective Actions. If non-compliance conditions are found during a Sanitation Districts' site inspection, the conditions will be noted on the Sanitation Districts' site inspection form with required follow-up actions and compliance dates. It is important to document in the site inspection report what has been done to correct the problem and when this occurred. Site Inspection requirements are specified in Section 6 of the Sanitation Districts' *Requirements for Recycled Water Users* (Tab 1).

4.6 Corrective Action

If an inspector finds a non-compliance condition, or a user discovers a non-compliance condition during routine operations, the Site Supervisor must be notified immediately. The Site Supervisor must immediately take corrective actions and notify the Sanitation Districts by phone, fax, or email of the non-compliant condition. The Site Supervisor must also provide written verification to the Sanitation Districts within three (3) business days from the date of confirmation of the violation. The recycled water purveyor must verify the corrective actions and provide written verification to the Sanitation Districts as described below in Section 4.7, Notifications and Reporting. Corrective

action requirements are specified in Section 7 of the Sanitation Districts' *Requirements for Recycled Water Users* (Tab 1).

4.7 Notifications and Reporting

The Site Supervisor is responsible for reporting specific information to the Sanitation Districts – in some cases this must be done immediately and requires follow-up information in writing. Notification and reporting requirements are specified in Section 8 of the Sanitation Districts' *Requirements for Recycled Water Users* (Tab 1). Notifications and reporting to the Sanitation Districts are required for the following types of situations:

4.7.1 *Public Health*

1. If you become aware of a complaint concerning recycled water use that may involve illness.
2. If the potable water system has been contaminated due to a cross-connection with the recycled water system.

Action for Nos. 1 and 2 – For a cross-connection incident, the Emergency Cross-Connection Response Plan must be immediately activated. Immediately, but not later than two (2) hours after discovering the cross-connection, notify the Sanitation Districts' Water Recycling Coordinator by telephone at 877-REUSE-83, and the Lahontan Regional Water Board, DDW, and LACDPH by telephone, email or fax after you are aware of the complaint. See Tab 2 for agency contact information. You must also provide written confirmation within three (3) business days to each agency.

4.7.2 *Spills or Unauthorized Discharges of Recycled Water*

1. Any spill or unauthorized discharge of more than 50,000 gallons of tertiary recycled water.

Action – Immediately, but no later than two (2) hours after you are aware of the spill or unauthorized discharge, notify the Sanitation Districts' Spill Hotline by telephone at (866) 484-1224, and the Lahontan Regional Water Board, and LACDPH by telephone, email, or fax after you are aware of the spill or unauthorized discharge. DDW must be contacted if a drinking water source is threatened by the spill. If the environment is endangered by the spill, the California State Department of Fish and Wildlife (State Park Dispatch 951-443-2969) must be contacted. See Tab 2 for agency contact information. You must provide information on the date and time the spill began and ended, the location of the spill, if the spill entered a storm drain or receiving water, the estimated volume or flow if the spill is ongoing, the estimated time of repair, the cause of the spill, the agencies involved with repair and clean-up, and the corrective actions taken, or the plans for corrective actions. You must also provide written confirmation electronically (e.g., email or fax) within three (3) business days to each agency. A recycled water spill notification form to report spills or unauthorized discharges is provided in Tab 11.

2. For volumes less than 50,000 gallons, any recycled water leaving the site other than a minor amount of recycled water that occurred due to overspray or over watering, minor breaks in the recycled water irrigation or distribution system, or broken sprinklers. The Sanitation Districts has developed an operation and maintenance plan to control incidental runoff from landscape irrigation projects (see Tab 9).

Action – Immediately, but no later than two (2) hours after you are aware of the spill, notify the Sanitation Districts’ Spill Hotline by telephone at 866-484-1224. You should provide information on the date and time the spill began and ended, the location of the spill, if the spill entered a storm drain or receiving water, the estimated volume or flow if the spill is ongoing, the estimated time of repair, the cause of the spill, the agencies involved with repair and clean-up, and corrective actions taken, or plans for corrective actions. You must also provide written confirmation electronically (e.g., email or fax) within three (3) business days to the Sanitation Districts. A recycled water spill notification form to report spills or unauthorized discharges is provided in Tab 11.

4.7.3 Non-compliance with Regulations

1. Any non-compliance with applicable laws and regulations.
2. Any non-compliance with the Sanitation Districts’ water recycling permits issued by the Lahontan Regional Water Board.
3. Any non-compliance with the Sanitation Districts’ Requirements for Recycled Water Users.

Action for Nos. 1, 2 and 3 – Notify the Sanitation Districts’ Water Recycling Coordinator by telephone at 877-REUSE-83 within two (2) hours after you are aware of the non-compliance. You must also provide written confirmation within three (3) business days to the Sanitation Districts.

4. Verification of Corrective Actions

Action – Your water purveyor must provide written confirmation to the Sanitation Districts’ Water Recycling Coordinator that corrective actions have been taken within 90 days of knowledge of non-compliance.

4.7.4 Site Inspections

1. Scheduling of site inspections.

Action – Your water purveyor must notify the Sanitation Districts’ Water Recycling Coordinator by telephone at 877-REUSE-83, or email at reuse@lacsdsd.org at least one (1) week prior to conducting a site inspection.

2. Results of site inspections.

Action – A site inspection report must be filled out and signed by the Site Supervisor and the inspector, with copies provided to the Sanitation Districts’ Water Recycling Coordinator within thirty (30) days following the end of the quarter in which the site inspection was conducted. See Tab 10 for a sample Site Inspection Report Form.

4.7.5 Changes at the Reuse Site

If there are any planned modifications or additions to the recycled water system.

Action – Notify the Sanitation Districts’ Water Recycling Coordinator, by telephone at 877-REUSE-83 or email at reuse@lacsdsd.org, prior to any modifications or additions to the

recycled water system. Any significant changes or modifications must be reviewed and approved by the Sanitation Districts before they are made.

4.7.6 Change in Site Supervisor

1. Any proposed changes in the individual designated as the Site Supervisor.
2. Contact information for the Site Supervisor including emergency information, or changes in the Site Supervisor's information.

Action for Nos. 1 and 2 – Notify the Sanitation Districts' Water Recycling Coordinator, by telephone at 877-REUSE-83 or email at reuse@lacsds.org, as soon as possible. A Recycled Water Site Contact Information Form is provided in Tab 12.

4.7.7 Information for Contractors Using Recycled Water

If you hire a contractor that will use recycled water, such as a truck hauler.

Action – You must provide contractors with information (preferably in writing) about the Sanitation Districts' Requirements for Recycled Water Users. It is highly recommended that the Site Supervisor review the Requirements for Recycled Water Users with contractors and their staff.

4.7.8 Monitoring and Reporting Requirements

In the conditional approval letter, the Sanitation Districts will specify the required information and when this information must be submitted to the Sanitation Districts to comply with the monitoring and reporting requirements specified in the Sanitation Districts' water recycling permits. Such information includes the uses of recycled water, the volume of recycled water used, tables demonstrating that irrigation water and fertilizer were applied at agronomic rates, and other information.

Action – You must provide this information to the Sanitation Districts as requested.

4.8 Record Keeping

The Site Supervisor or water purveyor must keep copies of the following that are available to employees at all time:

- Recycled Water System Operation Manual.
- Emergency Cross-Connection Response Plan.
- Sanitation Districts' Requirements for Recycled Water Users.
- Sanitation Districts' water recycling permits.
- Site inspection reports.
- As-built drawings and other design plans of the recycled water and potable water systems.
- Operations and maintenance logs

When you receive your conditional approval letter from the Sanitation Districts, the letter will include instructions on the specific type of information to be kept in the log such as the volumes of recycled water used at each reuse site, dates of inspections and cross-connection and backflow prevention testing, etc. From time to time, the Sanitation Districts may ask for additional

information to be kept in the log. Record keeping requirements are specified in Section 9 of the Sanitation Districts' Requirements for Recycled Water Users (Tab 1).

5. Reuse Websites and Resources

- Los Angeles County Sanitation Districts
<http://www.lacsd.org/waterreuse/>
- California State Water Resources Control Board, Division of Drinking Water
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/RecycledWater.html
- Los Angeles County Department of Public Health
<http://publichealth.lacounty.gov/eh/AreasofInterest/recycledwater.htm>
- California Department of Water Resources
<https://water.ca.gov/>
- State Water Resources Control Board & Regional Water Quality Control Boards
<http://www.swrcb.ca.gov/>
- Lahontan Regional Water Quality Control Board
<https://www.waterboards.ca.gov/lahontan/>
- WateReuse Association
<https://watereuse.org/>
- United States Environmental Protection Agency (EPA)
<https://www.epa.gov/waterreuse>
- EPA Guidelines for Water Reuse
<https://www.epa.gov/waterreuse/guidelines-water-reuse>
- WateReuse Los Angeles Chapter
<https://watereuse.org/sections/watereuse-california/chapters/los-angeles-chapter/>
- WateReuse Los Angeles Chapter Recycled Water Urban Irrigation User Manual
<http://www.lacsd.org/civicax/filebank/blobdload.aspx?blobid=11118>
- Report Related to Recycled Water Safety Issues
<http://www.datainstincts.com/images/pdf/healthsafety.pdf>

6. Glossary of Terms

Agronomic Rate - The rate of application of water to plants necessary to satisfy the plants' evapotranspiration requirements, considering allowances for precipitation, irrigation distribution uniformity, and leaching requirement, minimizing the movement of nutrients below the plants' root zone. Application of water at agronomic rates does not exceed vegetative water and nutrient demand and prevents overwatering, water ponding and runoff.

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

Approved (Authorized) Use - An application of recycled water in a manner, and for a purpose, designed in a User Agreement entered into with the Sanitation Districts and in compliance with all applicable regulatory requirements.

Authorized Recycled Water Use (Reuse) Site - A site with well-defined boundaries authorized for the use of recycled water; the uses of recycled water and the site location must comply with permits as issued by the State or Regional Water Board.

Backflow Prevention Device - A device installed to protect the potable water supply from contamination by non-potable water. The backflow prevention device must be approved by the State Water Board Division of Drinking Water.

Cooling Tower - A device used to cool water and dissipate unwanted heat into the atmosphere through evaporation of a portion of the water being cooled.

County Department of Public Health - This agency is the local health protection agency for the municipality in question.

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.

Disinfection - A process that uses chemical or physical means to inactivate pathogenic (disease-causing) organisms in water or wastewater.

Dual-Plumbed Site - A reuse site that uses separate piping systems for recycled and potable water within a facility and where the recycled water is used to 1) serve plumbing outlets (such as toilets and urinals but excluding fire suppression systems) within a building or 2) serve outdoor landscape irrigation at individual residences.

Filter - A unit for carrying out the process of filtration which consists of the combination of a filter medium and suitable hardware for constraining and supporting the filter medium in the path of the water. For example, in the case of a cartridge filter, the filter includes both the cartridge and the housing.

Groundwater - Water that is found in fully saturated soils, sediments, and rocks below the surface of the ground.

Hose Bibb - A faucet or similar device to which a common garden hose can be readily attached.

Industrial Cooling - Cooling of material or air for industrial processes or energy generation and does not include air conditioning for comfort of persons in a building.

Inspector - Any person authorized by the Sanitation Districts to perform inspections on or off the user site before construction, during construction, after construction, and during operation.

Irrigation Period - The time, from start of water flow to end, which a specific area receives recycled water by direct irrigation application, no matter how often the specific area is irrigated - that is length of the duty cycle.

Irrigation Use - An approved use of recycled water for landscape irrigation as defined for recycled water under Title 22, Chapter 3 of the California Code of Regulations.

Landscape Impoundment - An open body of recycled water on a use site that is utilized for aesthetic enjoyment or which otherwise serves a function not intended to include public contact.

Non-potable - Water that is not suitable for drinking by humans (includes recycled water).

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

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

Overspray - Water that is transmitted through the air to a location other than where the direct application of recycled water is intended.

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

Pathogen - Any agent, especially a microorganism, capable of causing disease.

Point of Connection - This is the point where the User's system ties to the Sanitation Districts' or purveyor's system, usually at the water meter.

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

Potable Water - Water that is suitable for drinking and conforms to California drinking water standards and other applicable standards.

Public - Any person or persons at large and not associated with the operation of the site who may come in contact with facilities and/or areas where recycled water is approved for use.

Purveyor - Any public, private, investor-owned, or other water utility that is legally permitted to distribute water and that obtains recycled water from the Sanitation Districts for distribution to Users.

Recreational Impoundment - An open body of recycled water located on a use site that may be used for unrestricted body contact (e.g., swimming, wading) or restricted non-body contact (e.g., boating, fishing) recreation.

Recycled Water - Water produced by a municipal water reclamation facility that is suitable for a beneficial use.

Reuse Site - see "Authorized Recycled Water Use (Reuse) Site" definition.

Runoff - When recycled water is intentionally or unintentionally allowed to drain outside the approved recycled water irrigation area. Runoff is considered “incidental” when it occurs in small amounts due to over-spray or leakage from sprinklers, over watering, breaks in lines or overflow of ponds that contain recycled water during storms.

Site Supervisor - The person designated by the owner or manager of the property upon which recycled water will be or is applied, who will carry out the responsibility of the owner or manager of the property for: (a) installation, operation, and maintenance of the system that enables recycled water to be used; (b) prevention of potential hazards; (c) compliance with Sanitation Districts’ water recycling permits, Sanitation Districts’ *Requirements for Recycled Water Users*, applicable laws and regulations, health department guidelines, and other associated documents; and (d) coordination with the cross-connection control program. This person should be available to the Sanitation Districts at all times and should have the knowledge and authority to carry out any requirements.

Spray Irrigation - Application of recycled water to land to maintain vegetation or support growth of vegetation by spraying it from sprinklers, micro-sprinklers, drip irrigation, or orifices in piping.

Tertiary Treatment - The treatment of wastewater beyond the secondary, or biological, stage. Normally implies the removal of a high percentage of pathogens and of suspended solids through filtration and disinfection.

Unauthorized Discharge - Any release or spill of recycled water that does not comply with the Sanitation Districts’ recycling water permits, Sanitation Districts’ *Requirements for Recycled Water Users*, Sanitation Districts’ ordinances, applicable Federal, State, or local statutes, regulations, ordinances, contracts, or other requirements.

User - Any person to whom the Sanitation Districts distributes recycled water under the Permits issued to the Sanitation Districts by the State or Regional Water Board, including end users to whom recycled water is conveyed through an intermediate party. User does not include persons who have been independently issued Permits from the State or Regional Water Board.

User Agreement - A contractual agreement between the user and/or water purveyor and the Sanitation Districts that establishes the conditions for recycled water service and use.

Water Purveyor - Any public, private, investor-owned, or other water utility that is legally permitted to distribute water and that obtains recycled water from the Sanitation Districts for distribution to users.

Water Reclamation Facility - An arrangement of devices, structures, equipment, processes, and controls which produce a recycled water supply suitable for the intended reuse.

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