

ATTACHMENT 2

JANUARY 17, 2018

City of Hesperia

Recycled Water Program Guidelines

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1. Introduction

This document was developed to assist the City of Hesperia with implementation of a recycled water program that will be in compliance with the Statewide General Water Reclamation Requirements for Recycled Water Use (Order WQ 2016-0068-DDW, General Order) and the Notice of Applicability (NOA) issued by the Lahontan Regional Water Quality Control Board on January 11, 2017. The guidelines address the procedures for issuing permits to recycled water users and explains the operational, reporting, and monitoring requirements for regulatory compliance, including roles and responsibilities of the Recycled Water Program Administrator, Distributor, and Users along with the necessary training procedures of their respective personnel.

The City of Hesperia is a member agency of the Victor Valley Wastewater Reclamation Authority (VWWRA). VWWRA is a joint powers authority and public agency of the State of California. In addition to the City of Hesperia, the VWWRA member agencies include the Town of Apple Valley, the County of San Bernardino Service Areas 42 and 64, and the City of Victorville. VWWRA owns and operates the Hesperia Subregional Water Reclamation Plant (WRP). Recycled water produced at the Hesperia Subregional WRP is distributed to recycled water users by the City of Hesperia (City). Initial plans for recycled water use include landscape irrigation at the City of Hesperia Golf Course, the City of Hesperia Civic Center, the City of Hesperia Township, the Hesperia Recreation and Parks District, the Jess Ranch Golf Course, and the Spring Valley Lake Golf Course. Additional uses and use sites will be considered as the program is developed.

1.1 Background

To augment and optimize its water recycling capabilities, VWWRA constructed satellite scalping plants within the wastewater collection system to produce disinfected tertiary recycled water closer to the end users to minimize overall production and distribution costs. One of these scalping plants is the Hesperia Subregional WRP. The initial recycled water production capacity of the WRP is 1.0 million gallons per day (MGD), but it is designed for expansion to at least 2.0 MGD. Depending on area growth and demand for recycled water, the WRP may eventually be expanded up to 4.0 MGD.

The Hesperia Subregional WRP treats wastewater extracted from the VWWRA collection system. The liquid stream treatment consists of influent pumping, fine screening, potential future grit removal, activated sludge biological treatment, membrane filtration by a membrane bioreactor (MBR) system, and UV disinfection. Effluent not used as recycled water is either discharged to percolation ponds near the WRPs or returned to the VWWRA collection system. During routine operation, it is expected that most if not all of the recycled water produced will be utilized, so recycled water storage/disposal is expected to be minimal and seasonal. The ponds are not intended for groundwater recharge and modifications to the groundwater adjudication will be required before they can be used for this purpose. Solids generated during treatment are returned to the VWWRA collection system for anaerobic digestion and energy production at the Regional WRP. The Hesperia Subregional WRP is located on the north side of Mojave Street, just west of Tamarisk Avenue as shown in **Figure 1**.



Figure 1. Hesperia Subregional WRP

1.2 Applicable Regulations and Ordinances

Recycled water programs in the VVWRA service area are regulated under the General Order (Order WQ 2016-0068-DDW) and NOA issued to VVWRA and its member agencies. Operation of the Hesperia Subregional WRP is regulated under Waste Discharge Requirements and Water Recycling Requirements (Order No. R6V-2013-0005).

VVWRA submitted a Notice of Intent (NOI) and CCR Title 22 Engineering Report on February 28, 2015. Regional Water Board staff provided comments on the NOI and Engineering Report on March 20, 2015, and the Division of Drinking Water (DDW) provided comments on April 15, 2015. VVWRA revised the documents to address these comments and submitted a revised technical report on January 4, 2016. DDW approved the NOI and Engineering Report on April 25, 2016 with specific conditions. On January 11, 2017, the Regional Water Board issued a NOA to enroll the VVWRA under the General Order.

VVWRA owns and operates the Regional WRP and Hesperia Subregional WRP and is the recycled water “Producer” and “Recycled Water Program Administrator” for the VVWRA service area. The City of Hesperia is the “Recycled Water Program Administrator” and recycled water “Distributor” within its service area.

VVWRA adopted a recycled water ordinance (Ordinance No. 006) that specifies how the VVWRA Recycled Water Program is implemented by VVWRA and its member agencies. VVWRA, as the overall Recycled Water Program Administrator, has delegated authority to the

City of Hesperia to process permit applications, approve permits for recycled water users (Users), establish recycled water Site Supervisors, designate use areas, specify application methods, dictate self-monitoring and reporting requirements, conduct site inspections, and provide notification of applicable regulatory requirements. VVWRA acts as a clearinghouse for the City's program; reviewing permit applications, approving permits, collecting self-monitoring reports, compiling site inspection reports, conducting water quality monitoring, and preparing annual reports to the Regional Water Board.

2. Types of Use and User-Specific Rules and Regulations

Currently, recycled water produced at the Hesperia Subregional WRP is solely applied for the purpose of landscape irrigation.

Landscape Irrigation

At present, six sites are scheduled to receive recycled water from the Hesperia Subregional WRP, shown in **Table 1**. Sites that are owned and operated by the City of Hesperia are considered Administrator Controlled Users. Sites that are not owned and operated by the City are considered Contracted Users. While both Administrator Controlled and Contracted Users are subject to the same requirements and operational guidelines, only Contracted Users must apply for a permit

Table 1. List of recycled water use sites

Recycled Water Use Site	Type of Use	Owner/Operator	User Type
Hesperia Golf Course	Landscape Irrigation	City of Hesperia	Administrator Controlled User
Hesperia Civic Center Park	Landscape Irrigation	City of Hesperia	Administrator Controlled User
Hesperia Township	Landscape Irrigation	City of Hesperia	Administrator Controlled User
Hesperia Recreation and Parks District	Landscape Irrigation	Hesperia Recreation and Parks District	Contracted User
Hesperia Unified School District	Landscape Irrigation	Hesperia Unified School District	Contracted User

3. Regulatory Procedures and Permitting

The City of Hesperia implements a permit program designed by VVWRA that ensures recycled water is safely and legally applied at the recycled water use sites. The program establishes recycled water site supervisors, designates use areas, specifies application methods, dictates self-monitoring and reporting requirements, and provides notification of applicable regulatory requirements to ensure regulatory compliance. As needed, VVWRA and the City of Hesperia will secure recycled water use agreements with Contracted Users. The specific requirements for recycled water use, excerpted from CCR Title 17 and 22, and the provisions of Order WQ 2016-0068-DDW will be attached to the recycled water permit and reviewed with each User during their initial training event.

3.1 Permit System for Recycled Water Users

Recycled water Users in Hesperia will be connected to a recycled water distribution pipeline. The complete regulatory process required to obtain and maintain a recycled water permit is shown in **Figure 1**. All Contracted Users must complete the Application for Recycled Water Use Permit (**Appendix A**). The information to be provided includes:

- Site layout;
- Plans to combine recycled water with other water sources (e.g., well water, process water);
- Proposed use of water (landscape irrigation, crop irrigation, cooling water, etc.);
- Type of irrigation system;
- Operation of on-site recycled water storage facilities;
- Procedures for cross-connection control; and
- Identification of a Recycled Water Site Supervisor.

As indicated above, Users must identify a Recycled Water Site Supervisor that will be the contact person at the Use Site and the person responsible for day-to-day operation of the recycled water system. The designated individual will have complete knowledge of the storage/irrigation system and will be available at all times to respond to emergencies or calls for assistance from the City.

Although a permit application does not need to be submitted, Controlled Users are subject to the same requirements as the Contracted Users. Site Supervisors for Controlled Users will work with staff designated by the City's Program Administrator to provide the site specific information applicable to their site.

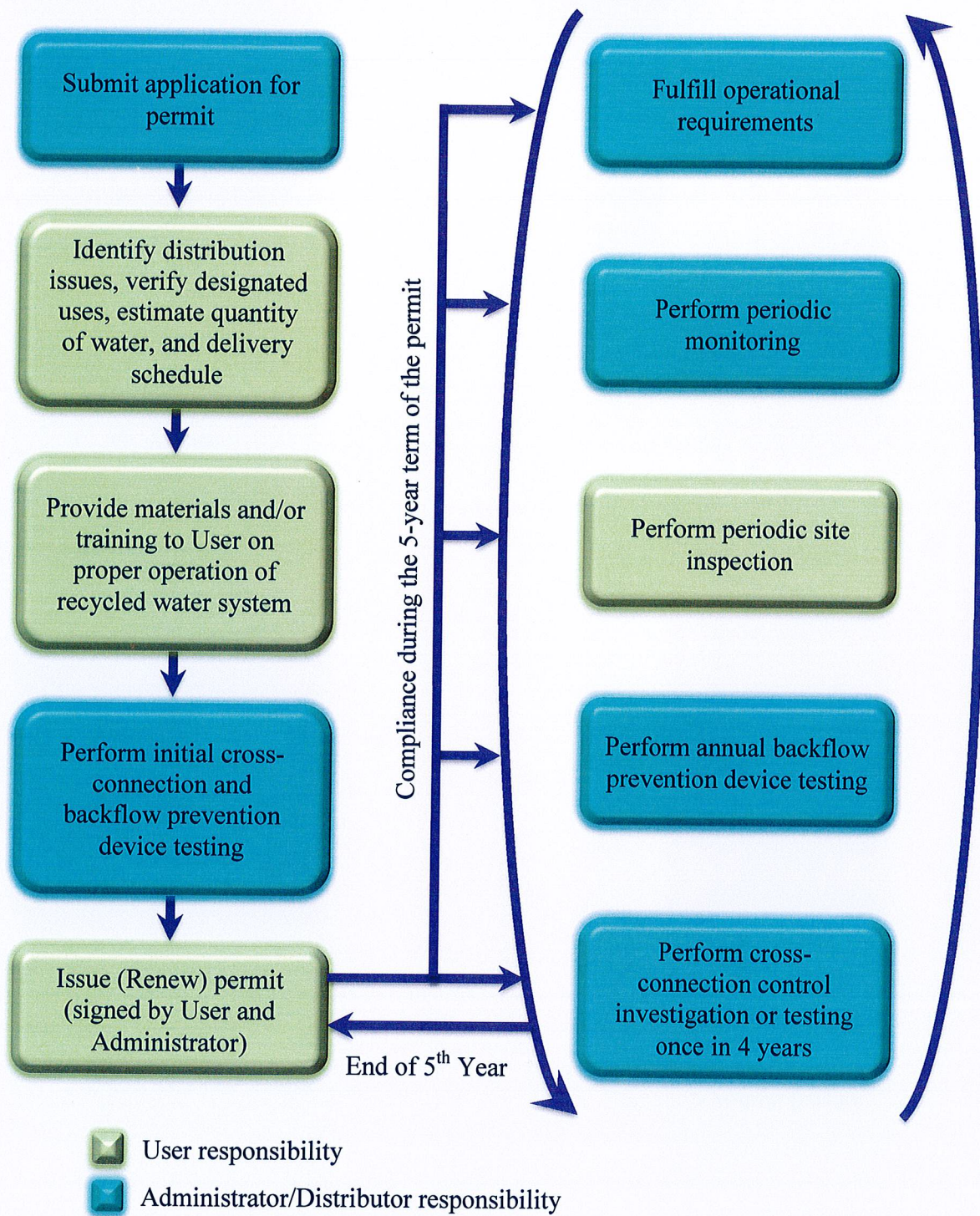


Figure 1. Regulatory framework for issuing and renewing recycled water use permits

The City will verify information provided by the User through a site visit and discussions with the potential User. Any distribution issues will be resolved by the User and the City and incorporated into the Recycled Water Use Permit (Appendix A) or, if needed, a Recycled Water Use Agreement. Reference materials with information on the proper operation and maintenance of the recycled water system will be provided to the User during the permit issuance process. These materials will include, but not necessarily be limited to, Recycled Water Program Rules and Regulations (Appendix B), CCR Titles 17 and 22, and Order WQ 2016-0068-DDW.

Authorization to use recycled water will be issued to a User only after completion of a Cross-Connection Control Investigation or Testing to identify and remove any connections between recycled and potable water supplies (Cross-Connection control program is discussed in detail in **Section 4**). The City will review the investigation and test results to ensure that all connections between recycled and potable water supplies are terminated before issuing the permit to Contracted Users. "Additional Permit Terms and Conditions" will be attached to the permit to outline the required monitoring sites and frequencies, and any site-specific permit conditions that may be necessary. During the 5-year permit term, Users are required to:

- Fulfill operational requirements by assuming the responsibilities outlined in **Section 4**.
- Perform the required monitoring and reporting as indicated in **Section 5**.
- Perform annual backflow prevention device testing and submit applicable reports to the City.
- Perform cross-connection control investigation or testing once every four years and submit applicable reports to the City.

The City performs periodic site visits and inspections during the permit term and assesses compliance with permit conditions upon re-issuance of the Recycled Water Use Permit every five years. Similarly, Use Agreements with Controlled Users will be reviewed every five years.

4. Fulfilling Operational Requirements

The recycled water Users and the City must fulfill operational requirements and follow the guidelines outlined below.

4.1 User Responsibilities

The User is responsible for operating and maintaining all recycled water equipment located beyond the delivery point (the recycled water meter). An onsite Recycled Water Site Supervisor is designated for each Use Site. The Site Supervisor ensures safe usage of recycled water at the Use Site.

The Recycled Water Site Supervisor is responsible for operation, maintenance, self-monitoring, and cross-connection control at each use site. The Site Supervisor will also be responsible for communicating with the City and conducting periodic staff education/training sessions. Site Supervisors must attend a Site Supervisor training arranged by the City within the first four months of receiving recycled water. Site Supervisors should maintain a current training certificate or an indication of the completion of the training.

One of the main responsibilities of the Site Supervisor is to ensure operational compliance of the facility. This entails supervising the fulfillment of all User responsibilities included in this section as operational requirements (i.e., site control, irrigation application, maintenance, monitoring and testing).

The Site Supervisor is also responsible for training all employees that interact with recycled water and developing a precautionary safety plan for employees that repair/replace recycled water equipment. Employee training is verified by the City during Use Site inspections. Additional training of User employees is provided by the City if particular issues are noted.

4.1.1 Site Control

Cross Connection and Backflow Prevention

A cross-connection is an unintended connection between the potable water system and the recycled water system. A cross-connection exposes the community water supply system to possible intrusion of recycled water and the Users to the possibility of ingestion of recycled water.

Prior to issuance of a Recycled Water Use Permit and every four years thereafter (or more frequently if necessary), a Certified Cross-Connection Control Specialist (as described in CCR Title 17, Section 7605) must conduct a site investigation and test the recycled water system to identify any cross-connections. The Site Supervisor must be present during the test.

On an annual basis, the User must provide access to all relevant site locations and equipment by a Certified Backflow Prevention Device Tester and City staff for backflow prevention device testing.

The investigation and testing results will be recorded by the Specialists on the forms in Appendix F and any deficiencies will be noted along with the prescribed corrective actions. The User must address any deficiencies noted by the Specialists within a deadline specified by the City in order to initiate or continue delivery of recycled water. If during a test any cross-connection is found to

exist, an emergency procedure as detailed in **Section 7** should be immediately initiated and completed.

Unapproved Use of Recycled Water

Use of recycled water for any purpose other than those explicitly allowed in the Recycled Water User permit (or agreement) is strictly prohibited. The Site Supervisor is responsible for ensuring the appropriate use of the recycled water and should initiate an emergency procedure as detailed in **Section 7** if any unapproved use is detected.

Labeling and Advisory Signage

All Use Sites that are accessible to the public must be posted with clearly visible signs to inform the public that recycled water is used at that location. Signs shall meet the requirements of CCR Title 22, Section 60310 (g): measure no less than 4 inches high by 8 inches wide, include the words “Recycled Water – Do not Drink,” and display an international symbol for no consumption. It is recommended that signs be posted at least every 500 ft with a minimum of a sign at each corner and at each access road.

All recycled water facilities and equipment should be marked or color-coded with purple, purple pipe, purple color paint or wrapping with purple color adhesive tape.

4.1.2 Irrigation Application

Coverage Test

The Site Supervisor is responsible for minimizing overspray, runoff, and ponding from the recycled water irrigation system.

Protection of Drinking Fountains and Outdoor Eating Areas

Drinking fountains, outdoor eating areas, and other similar facilities located within the use area must be protected from overspray or contact with recycled water. Relocating or modifying parts of the irrigation system or those facilities may resolve the issue. If not, shielding devices must be installed to protect drinking water fountains and other facilities.

Protection of Potable Water Systems and Aquifers

No irrigation with recycled water may take place within 50 ft of a domestic water supply well unless specific well protections are installed and verified. No recycled water impoundments may occur within 100 ft of a domestic water supply well. In addition, separation of potable and recycled water piping shall be maintained to the greatest extent possible in both new construction and retrofit applications. The California Department of Public Health Guidance Memo No. 2003-02, “Guidance Criteria for the Separation of Water Mains and Non-Potable Pipelines” includes methods and standards for protecting potable water pipelines.

Irrigation Schedule (Hours of Operation)

Irrigation shall occur during the hours of least use by the public and (if applicable) as indicated on the individual Recycled Water Use Permits. The Site Supervisor is responsible for maintaining a schedule that conforms to this requirement.

Irrigation at Agronomic Rates

The General Order requires “application of recycled water to use area(s) at an agronomic rate¹ that takes into account soil, climate, and plant demand. In addition, application of recycled water and use of fertilizers shall be at a rate that takes into consideration nutrient levels in recycled water and nutrient demand by plants.”

The City follows the approach described by VVWRA in the NOI and will use the process outlined in **Table 2** to conservatively estimate the volume of recycled water required for irrigation. The crop coefficients, sprinkler efficiency, and 2013 weather conditions are presented in Table 2 as an example. The spreadsheet calculations take into account local weather conditions, the type of vegetation being irrigated, crop evapotranspiration, and sprinkler efficiency (large applicators will be expected to achieve the highest sprinkler efficiency that is possible). The total annual irrigation requirement of 6.0 ft/yr calculated for local grass in 2013(**Table 2**) assumes leaching of salts or deep percolation (if needed) to maintain healthy turf conditions will be done with potable or other supplies of irrigation water. As described below, actual conditions will be used to complete the agronomic rate calculation for each site.

Local precipitation and evapotranspiration data will be obtained from the Victorville California Irrigation Management Information System (CIMIS) station #117 at the end of each month. The recycled water Users will submit monthly reports to the City that include the area(s) irrigated each month, type of vegetation under cultivation, and sources/volume of other irrigation water applied. The City will maintain a spreadsheet (similar to **Table 2**) to compare actual use with the calculated agronomic rate. Applicable crop coefficients will be identified and utilized. The assessment will be conducted over three month periods and, if necessary, Users will be contacted and provided recommendations to reduce recycled water irrigation rates or change operations. If needed to ensure application at agronomic rates and prevent runoff/ponding, site- specific Irrigation Management Plans will be developed by the Users for review and approval by the City. The Irrigation Management Plans may include downloading evapotranspiration data from CIMIS Station #117 on a daily or weekly basis to better inform irrigation system operation.

To avoid application above nitrogen agronomic rates, use of recycled water and fertilizers must be at a rate less than or equal to the nitrogen requirement of the crop under cultivation. For example, to maintain high quality Bermuda grass, it must be mowed frequently and 0.5 lb N/1,000 ft should be applied each month (Pettygrove and Asano, 1988; Duple, R., Undated). If applying nitrogen at this monthly rate, 262 lb N/acre-yr is required to support Bermuda grass.

The process outlined in **Table 3** will be used to determine the total nitrogen loading resulting from irrigation of grass with 100% recycled water. The effluent nitrogen concentrations presented in **Table 3** are based on the design criteria for the Subregional WRPs. Based on 2013 weather conditions, Subregional WRP effluent nitrogen design criteria, the total nitrogen loading for irrigating Bermuda grass with Subregional WRP recycled water would be approximately 130 lb N/acre-yr. Based on the 2013 assessment, estimated nitrogen loading from the Subregional WRPs would have been less than 50% of the threshold value identified for Bermuda grass (262 lb N/acre-year).

¹ An agronomic rate is the rate of application of recycled water to plants necessary to satisfy the plants' evapotranspiration requirements, considering allowances for supplemental water (e.g., effective precipitation), irrigation distribution uniformity, and leaching requirement, thus minimizing the movement of nutrients below the plants' root zone.

Table 2. Estimated Grass Water Use in Victorville Area (Based on 2013 weather conditions)

Month	Eto, Victorville (in./mo) ¹	Precipitation, Victorville (in./mo) ²	Eto-P (in./mo) ¹	Crop Coefficient (grass) ³	Sprinkler Efficiency ⁴	Grass Water Use (in./mo) ⁵
January	2.12	0.72	1.40	0.44	0.73	0.84
February	3.06	0.2	2.86	0.43	0.73	1.68
March	5.56	0.13	5.43	0.67	0.73	4.98
April	7.02	0	7.02	0.76	0.73	7.31
May	8.23	0	8.23	0.74	0.73	8.34
June	9.42	0	9.42	0.89	0.73	11.48
July	8.87	0	8.87	0.89	0.73	10.81
August	8.68	0	8.68	0.82	0.73	9.75
September	6.75	0	6.75	0.82	0.73	7.58
October	4.6	0	4.60	0.77	0.73	4.85
November	2.44	0	2.44	0.81	0.73	2.71
December	2.1	0	2.10	0.51	0.73	1.47
Total (in./yr)	68.85	1.05	67.80	--	--	71.82
Total (ft./yr)	5.74	0.09	5.65	--	--	6.00

¹ Eto, 2013 monthly totals from CIMIS Victorville Station #117 (downloaded from CIMIS website on 11/20/14).

² Precipitation, 2013 monthly total from CIMIS Victorville Station #117 (downloaded from CIMIS website on 11/20/14).

³ Kc, determined for Bermuda grass/perennial rye at golf courses in Las Vegas, NV. (Devitt et al, 1992)

⁴ Solid set sprinkler efficiency ranges from 70 to 80%. Minimum efficiencies can be expected in hot climates, low humidity, and high average wind speeds. (Pettygrove and Asano, 1988)

⁵ The calculated irrigation requirement does not include a leaching factor.

The recycled water Users will provide information on the volume of recycled water applied, area irrigated, type of vegetation under cultivation, and any other source/type of fertilizer used. The City will use this information to calculate actual nitrogen loading which will be compared to applicable crop thresholds using hydraulic agronomic rate requirements. The assessments will be conducted over three month periods and, if necessary, the City will contact the User and provide recommendations to reduce nitrogen loading rates or change operations. If needed to ensure application at nitrogen agronomic rates, site-specific Irrigation Management Plans will be developed by the Users for review and approval by the City. The Irrigation Management Plans may include monitoring fertilizer application on a daily or weekly basis to improve fertilization practices and inform irrigation system operation.

Table 3. Estimated Total Nitrogen Loading (Based on 2013 Grass Water Use and Subregional WRP design criteria)¹

Month	2013 Grass Water Use (in./mo)	Subregional WRP	
		Total Nitrogen (mg/L) ³	Total Nitrogen Applied (lb N/acre)
January	0.84	8	1.53
February	1.68	8	3.05
March	4.98	8	9.02
April	7.31	8	13.23
May	8.34	8	15.10
June	11.48	8	20.78
July	10.81	8	19.57
August	9.75	8	17.64
September	7.58	8	13.72
October	4.85	8	8.78
November	2.71	8	4.90
December	1.47	8	2.65
Total (lb N/acre)	--	--	130.0

¹ Total Nitrogen = TKN + nitrate + nitrite

³ Total nitrogen loading based on design criteria of 8 mg/L TN.

4.1.3 Maintenance, Monitoring, and Testing

Site Supervisors must perform monitoring and preventive maintenance to ensure the recycled water system remains in compliance. This includes observation of site conditions and verification of proper operation of recycled water distribution system at locations included in the Recycled Water Use Permit. The site inspection and maintenance program must at least include:

- Confirming appropriate usage of recycled water as designated in the Recycled Water Use Permit and estimating the use amount.
- Performing inspections of recycled water system equipment and facilities for leaks, breaks, overflows, etc., and immediately repair any defections.
- Checking for occurrences of recycled water ponding or runoff and estimate their respective volumes.
- Checking all signs and labels for their proper placement and legibility, and replace or add signs and labels wherever needed.
- Maintain accurate record keeping system of all inspections, modifications, and repair work for inclusion in monthly Self-Monitoring reports (Appendix E).

4.2 Distributor Responsibilities

The City (Distributor) is responsible for operating and maintaining the recycled water distribution equipment between the Subregional WRP and the delivery point (the recycled water meter). The City also has administrative responsibilities delegated from VVWRA for issuing and renewing permits, site supervisor training, and site inspections, cross-connection control, and reporting results to VVWRA.

4.2.1 Handling the Effects of Recycled water on Equipment

Recycled water may contain higher levels of chlorine, sodium, and potentially ammonia and nitrates than potable water. The Distributor should be aware of the effects of such constituents in higher concentrations on the distribution system and implement mitigation strategies that will handle such effects and deteriorations.

4.2.2 Cleaning Tanks and Pipelines

Recycled water tanks and pipelines require more frequent cleaning than potable water tanks and pipelines due to higher nutrient concentration. Before cleaning tanks and pipes it is important to determine where the discharges from the cleaning operations will go. When cleaning recycled water tanks, it is important to provide adequate ventilation and cleaning equipment. For pipeline cleaning, the Distributor may consider a directional flushing program.

4.2.3 Public Notice

The distributor should provide reasonably timed notices to the Users and public prior to performing system shutdowns.

4.2.4 Personnel Training

City employees must be given an initial training on recycled water program operation, regulatory requirements, and safety precautions. The Recycled Water Program Rules and Regulations, Order WQ 2016-0068-DDW, CCR Titles 17 and 22, the recycled water ordinance (if adopted), and O&M Manual sections on recycled water equipment should be reviewed by all employees that interact with the recycled water program. The training will include:

- A facility tour to demonstrate recycled water production and distribution
- Proper handling of recycled water and safety precautions
- Review of maintenance procedures and proper use of tools
- Color coding and labeling recycled water facilities
- Cross-connection control procedures
- Measures to implement in the event of a recycled water discharge
- Emergency procedures

A tour of the use sites should also be conducted to introduce staff to Recycled Water Site Supervisors, identify site characteristics, and locate storage and distribution equipment. Follow-up training should be provided every 2 years or more often if needed.

4.2.5 Labeling and Advisory Signage

All Use Sites that are accessible to the public must be posted with clearly visible signs to inform the public that recycled water is used at that location. Signs shall meet the requirements of CCR Title 22, Section 60310 (g): measure no less than 4 inches high by 8 inches wide, include the words “Recycled Water – Do not Drink,” and display an international symbol for no consumption. It is recommended that signs be posted at least every 500 ft with a minimum of a sign at each corner and at each access road.

All recycled water facilities and equipment should be marked or color-coded with purple, purple pipe, purple color paint or wrapping with purple color adhesive tape.

4.2.6 Site Supervisor Training

When a Recycled Water Use Permit is issued, a training session must be held with the designated Recycled Water Site Supervisor regarding recycled water regulations, safety precautions for personnel handling recycled water, how to complete the program forms, and when to submit the required information. A copy of the Recycled Water Program Rules and Regulations, Order WQ 2016-0068-DDW, and CCR Titles 17 and 22 must be provided to facilitate understanding of the permit program and regulatory requirements.

4.2.7 Periodic Site Inspections

The City must perform unannounced, randomly timed inspections of Use Sites at least once per year. Observations will be recorded on the Site Inspection Report (Appendix C). The observations are used to verify information reported in the User Self-Monitoring Reports and include such items as recycled water use, operation of storage and irrigation systems, placement of warning signs, and evidence of runoff or ponding.

All site inspection reports and User Self-Monitoring Reports must be provided to VVWRA for submittal to the Regional Water Board in the Recycled Water Annual Report, or sooner if any violations of permit conditions occur.

4.2.8 Backflow Testing and Cross-Connection Control Program

The City will implement the Cross-Connection Control Program by sending annual and every four year testing notices to the Users, reviewing test results, and enforcing compliance. The City ensures CCR Title 17 requirements are met at each Use Site and that backflow prevention devices are installed at all potable water supply wellheads and connections. If deficiencies are noted by a Certified Specialist, the City will establish a deadline for compliance and assist with re-inspections to identify when corrections are completed.

The results of User investigations and testing are incorporated into the User’s file and may be included in the Recycled Water Annual Report to the Regional Water Board. A recycled water shutdown test is required prior to permit issuance and every four years if potential problems are identified. Interim testing may be conducted if a User installs new equipment, significantly changes its recycled water operation, or a possible cross-connection is identified at the Use Site.

5. Monitoring and Reporting Requirements

5.1 City (Administrator/Distributor)

5.1.1 Monitoring Requirements

As the Distributor, the City is responsible for transport of recycled water from the WRP to the Use Sites. WRP operations are continuously scrutinized to ensure production of high quality recycled water. Use Sites are randomly inspected at least once a year to ensure proper usage of recycled water. Details of the two types of Administrator/Distributor monitoring are presented below.

VVWRA and the City monitor the quantity of recycled water leaving the WRP and delivered to the Use Sites. Meters installed at each delivery point record the total number of gallons distributed to each User. These metered amounts, recorded on a monthly basis, are used to quantify the monthly delivery to each User.

VVWRA monitors the quality of recycled water leaving the WRP. Therefore, VVWRA measures the concentrations of constituents of concern for landscape irrigation.¹ The results will be reported to Users on an annual basis, so they can utilize this information to determine fertilizer application rates or incorporate soil amendments. VVWRA collects samples after disinfection and prior to recycled water pumping. Samples from this location are representative of the recycled water quality being distributed to the Users. If the limits specified in CCR Title 22 are exceeded, VVWRA will notify the Regional Water Board within 24 hours and halt distribution until the violations have been corrected.

The City will perform unannounced, randomly timed inspections of Use Sites at least once per year. Observations are recorded on the Site Inspection Report (**Appendix C**). The observations are used to verify information reported in the User Self-Monitoring Reports and include such items as recycled water use, operation of storage and irrigation systems, placement of warning signs, and evidence of runoff or ponding.

All monitoring results will be submitted to the Regional Water Board in the Recycled Water Annual Report, or sooner if any violations of permit conditions occur.

5.1.2 Reporting Requirements

The City is required to provide documents to VVWRA that summarize operation of the Recycled Water Program, report any violations of the General Order, document actions taken or planned to correct the violations and prevent future violations. The documents help VVWRA assess compliance with the General Order and facilitate compilation of the Recycled Water Annual Report for submittal to the Regional Water Board. The required documents include Application for Recycled Water Use Permit, Site Inspection Reports, User Self-Monitoring Reports, Significant Violation Reports, and Agronomic Rate Assessments.

¹ pH, Chloride, Boron, Electrical Conductivity, Nitrate, Nitrite, Ammonia, Total Nitrogen, Total Kjeldahl Nitrogen.

Recycled Water Annual Report

VVWRA submits the Recycled Water Annual Report to the Regional Water Board that describes operation of and changes to the Recycled Water Program. The City will provide the following information for its service area to VVWRA to be included in the Recycled Water Annual Reports:

- A summary table of all recycled water Users and use areas. Maps may be included to identify use areas. Newly permitted recycled water Users and use areas shall be identified.
- Volume of recycled water distributed and used (acre-ft).
- A summary table of all inspections and enforcement activities initiated by the City. Included in the report will be a discussion of compliance and the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into compliance with the Notice of Intent (NOI) and/or General Order. Copies of any enforcement actions taken by the Administrator shall be provided.
- Information on how Irrigation Management Plans are being implemented and whether large applicators have applied both recycled water and nutrients at agronomic rates. Any adjustments or modifications will be identified for the upcoming year to ensure appropriate amounts are applied.
- Summary of training events conducted and the number of participants.
- The number and severity of any violations found during the reporting period, actions planned/taken to resolve violations, and the penalty of perjury statement.

Significant Violation Report

If the General Order provisions are violated, the City must notify the Regional Water Board by phone within 24 hours. The information to be provided is outlined in the Significant Violation Report (Appendix D). When the violations have been corrected or the User has been removed from service, the Regional Water Board will be notified of the final resolution.

5.2 User Responsibilities

5.2.1 Self-Monitoring and Reporting Requirements

As part of the terms and conditions of the Recycled Water Use Permit, the Users are required to perform monthly observations of site conditions and verify proper operation of their recycled water distribution system. Monitoring locations are specified in the Recycled Water Use Permit for Controlled Users. Both land sites and pond (or impoundment) observation sites may be specified. The Users must perform the observations and data collection identified in **Table 4** and record the results in the Recycled Water User Self-Monitoring Report (Appendix E). A copy of the monitoring report must be submitted to the City within 15 days after the end of the calendar quarter.

Although submittal of User Self-Monitoring Reports is required on a quarterly basis, User awareness must be continuous to note any violations of recycled water use requirements. If a permit violation or adverse condition is noted, the User must contact the City immediately by telephone. The User also has a responsibility to discuss any planned operational changes with the City prior to implementation. Depending on the nature of the changes, the City will inform

VVWRA and the Regional Water Board and may change the terms and conditions of the Recycled Water Use Permit.

Table 4. Recycled Water Program Use Area Monitoring Requirements

Constituent	Units	Sample Type	Monitoring Frequency
Acreage Applied ¹	Acres	Calculated	Monthly ²
Recycled Water Applied ³	Acre-ft.	Measured	Monthly ²
Fertilizer Applied ⁴	lb N/acre	Measured	Monthly ²
Backflow or Cross-Connection Incident	--	By Occurrence	By Occurrence
Soil Saturation/Ponding ⁵	--	Observation	Monthly ²
Nuisance Odors/Vectors ⁵	--	Observation	Monthly ²
Discharge Off-Site ⁵	--	Observation	Monthly ²
Notification Signs ⁶	--	Observation	Monthly ²
Any Other Condition of Note	--	Observation	Monthly ²

¹ Acreage applied" is the total number of acres to which recycled water is applied during the monitoring period.

² Monthly when recycled water is used. Adverse conditions should be immediately reported to the Administrator.

³ If known, report the amount of recycled water applied to each irrigation block or industrial process.

⁴ Amount of commercial fertilizers applied.

⁵ Note if any of these conditions occurred during the monitoring period.

⁶ Verify notification signs are in place according to CCR Title 22, section 60310 (g).

6. Compliance Program

The Regional Water Board is guaranteed access, for inspection and monitoring purposes, to premises where recycled water is being produced or used. Records maintained for the Recycled Water Program will be made available to the Regional Water Board upon request. Each User is responsible for implementing the Recycled Water Program Rules and Regulations (Appendix B), CCR Titles 17 and 22, Order WQ 2016-0068-DDW, and the recycled water ordinance.

Compliance activities and notification triggers are shown schematically in **Figure 2**. The Users perform self-monitoring by routinely observing operation of the recycled water storage facilities and distribution system. If any possible violations of their permit conditions are noted, the Users must contact the City immediately. At that time, the City will assess the incident, inspect the site (if necessary), and determine if a violation has occurred. In addition, the California Office of Emergency Services (Cal OES) must be notified by telephone as soon as possible of any release of hazardous materials to surface waters. If the incident is determined to be a violation, the City will notify VVWRA and the Regional Water Board (and Cal OES, as appropriate) of the violation within 24 hours. The City and User will discuss the cause of the violation, and the approach/timing for correction. If a violation has occurred, the City will prescribe actions and deadlines. The Regional Water Board will be copied on any correspondence concerning non-compliance between the City, VVWRA and the User. The City will conduct a site inspection on the deadline date to determine if compliance has been achieved. If the User fails to implement the prescribed actions, the City has the authority to shut off the recycled water supply to the site. The delivery of recycled water shall not be resumed until all conditions which caused the violations have been corrected.

Inspections of Use Sites will be conducted at random during times of recycled water use. During the visit, the City will verify site operation according to permit conditions. If permit violations are noted, the actions described above will be implemented. The City will notify VVWRA and the Regional Water Board (and Cal OES, as appropriate), prescribe corrective actions, establish a deadline, and verify implementation. When the violations have been corrected or the User has been removed from service, the Regional Water Board will be notified of the final resolution.

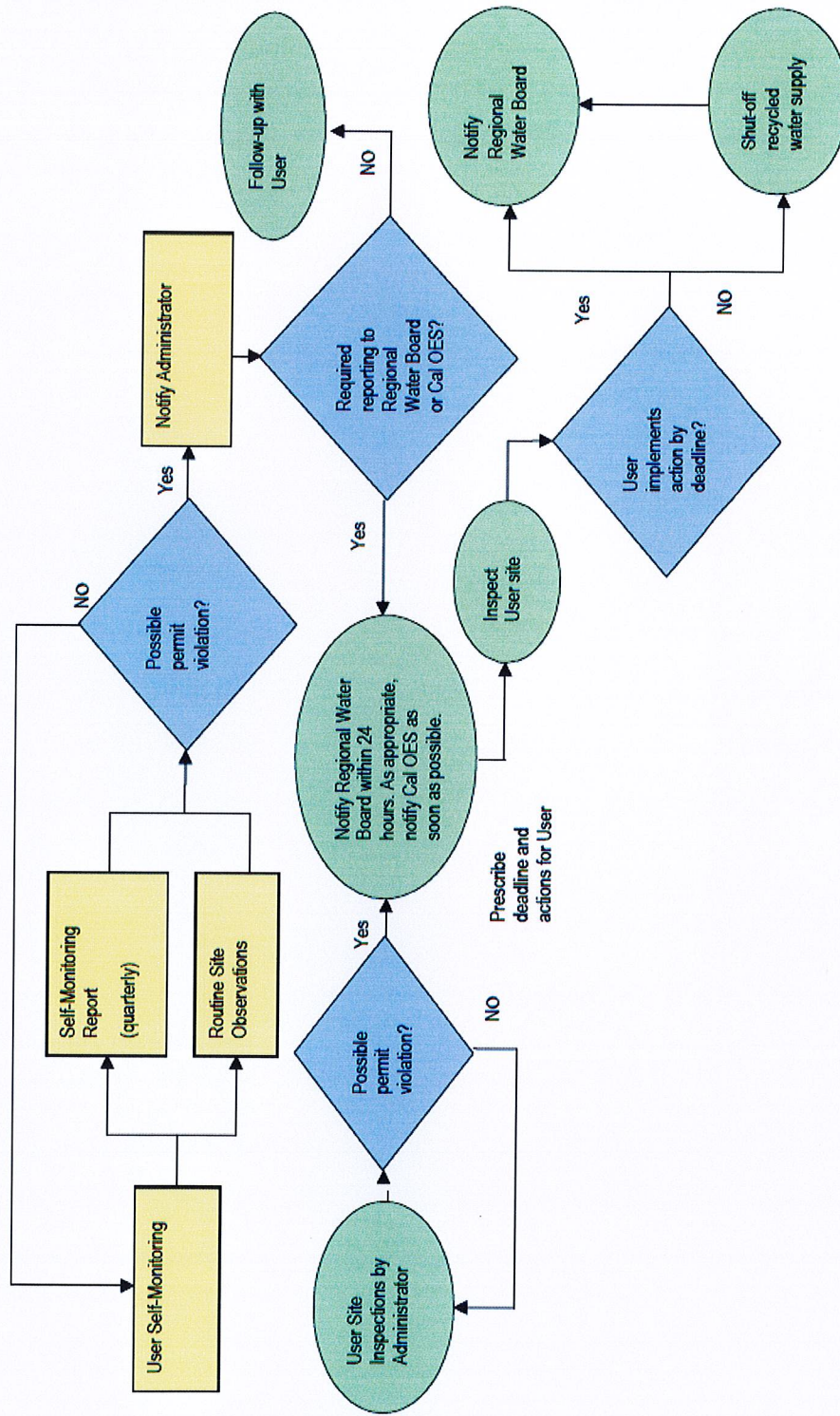


Figure 2. Recycled Water Program Schematic Representation of Compliance Activities

7. Emergency Procedures and Notification

Emergencies, such as equipment failures, cross-connections, earthquakes, and power outages, may occur at Use Sites or at the WRP. In the event of such emergencies, notification of the VVWRA, the City, or the User (as applicable) must take place as soon as possible. An immediate change in operation or termination of flow may be required to minimize risks to human health. Emergency procedures are detailed in the following sections. Emergency contact information for the Distributor and the Recycled Water Site Supervisors is presented in **Table 5**. The list will be posted at City offices updated when new User permits are approved.

Table 5. Emergency Contacts

Recycled Water Program Administrator and Distributor	Contact	Contact Information
City of Hesperia	Jeremy McDonald, Public Works Supervisor - Water	Phone: 760-947-7742 Fax: 760-947-4060 jmcdonald@cityofhesperia.us
VVWRA Coordinator (Emergency Contact Person)		Phone: 760-246-8638
Recycled Water Users	Contact	Contact Information
Hesperia Golf Course	City needs to provide this for each of the users listed.	
Hesperia Civic Center Park		
Hesperia Township		
Hesperia Recreation and Parks District		
Hesperia Unified School District		

7.1 Distributor Emergency Procedures

If a system failure occurs at the Subregional WRP and properly treated recycled water cannot be guaranteed to the User, the VVWRA will shut off the recycled water supply pumps. The water will be stored in on-site and off-site basins or sent to the Regional WRP until the problems have been corrected. The Users will be notified by telephone by the City as soon as possible of the flow termination, the nature of the failure, and an estimation of the required down-time. If inadequately treated water was already delivered to the User, precautions will be prescribed (limitation of public access, avoidance of contact, prevention of runoff, etc.).

In case of a recycled water emergency within the distribution system (i.e., pipe break, pump failure), the City will contact VVWRA with the details and request flow termination. The VVWRA Coordinator is the primary contact person and is knowledgeable about the Recycled Water Program and its facilities, included in **Table 5**. The VVWRA Operations Center is available 24 hours a day, 7 days a week for recycled water emergencies.

8. References

1. California State Water Resources Control Board (2016). Water Reclamation Requirements for Recycled Water Use, Order WQ 2016-0068-DDW, Sacramento, California.
2. California Department of Health Services (2001). "Guidelines for the Preparation of an Engineering Report for the Production, Distribution, and Use of Recycled Water," prepared by the Department of Health Services, Division of Drinking Water, Recycled Water Unit, Sacramento, California.
3. California Department of Health Services (2003). "Guidance Memo No. 2003-02: Guidance Criteria for the Separation of Water Mains and Non-Potable Pipelines" prepared by the Department of Health Services, Division of Drinking Water and Environmental Management, Sacramento, California.
4. Devitt, D.A., Morris, R.L. and Bowman, D.C. (1992). "Evapotranspiration, crop coefficients, and leaching fractions of irrigated desert turf grass systems." *Agron. J.* 84:717-723.
5. Duble, R. (Undated). "Bermuda Grass - The Sports Turf of the South," Texas A&M Agrilife Extension, Aggie Horticulture.
<http://aggie-horticulture.tamu.edu/archives/parsons/turf/publications/bermuda.html>
6. Mojave Water Agency (2015), "Mojave Salt and Nutrient Management Plan," prepared by Kennedy/Jenks Consultants and Todd Engineers.
7. Pettygrove, G.S., Asano, T. (1988). *Irrigation with Reclaimed Municipal Wastewater*, Lewis Publishers, Inc.

Appendix A. Recycled Water Permit Application

City of Hesperia Recycled Water Program

Application For a Recycled Water Use Permit



City of Hesperia Recycled Water Program Application For a Recycled Water Use Permit	
Site Where Use Is Proposed	(Program Use Only)
Name or Description of Site:	Date Received
Parcel No:	Date Distributed
Location or Address:	Date of Determination
	<input type="checkbox"/> Accepted <input type="checkbox"/> Returned <input type="checkbox"/> Rejected
	Customer Number:
	Notes:
Applicant Information	
Applicant is <input type="checkbox"/> Owner <input type="checkbox"/> Lessee <input type="checkbox"/> Other (describe)	
Applicant's Name	Title
Address	Phone
City	State
	Zip
Owner's Name (if different)	
Contact	Title
Address	Phone
City	State
	Zip
User's Designated Recycled Water Site Supervisor (See Note Below)	
Relationship to Applicant: <input type="checkbox"/> Same <input type="checkbox"/> Partner <input type="checkbox"/> Employee <input type="checkbox"/> Other:	
Name	Title
Business Address	
City	State
	Zip
Note: The Recycled Water Supervisor must be reachable at all times in case of emergency. All numbers are for use by the City of Hesperia and the VVWRA Recycled Water Program only.	
Telephone number during regular business hours:	
EMERGENCY NUMBERS	Evening: Message:
	Pager: Cell Phone:
Proposed Recycled Water Uses	
<i>Attach site plan that shows property boundaries, irrigated area, storage facilities, well type and locations, and residential/commercial buildings.</i>	
<input type="checkbox"/> Landscape Irrigation: Approximate Area _____ acres Onsite Groundwater Wells? _____ (Y?N)	<input type="checkbox"/> Ornamental Pond <input type="checkbox"/> Commercial Property <input type="checkbox"/> Other <input type="checkbox"/> Residential Property
Briefly describe the proposed uses and degree of contact with public:	
If groundwater wells are present, identify # of wells and designated uses:	

City of Hesperia Recycled Water Program

Application For a Recycled Water Use Permit (Cont.)



☐ Industrial Use Onsite Groundwater Wells? _____ (Y?N)

Briefly describe the proposed use and degree of contact with public:

If groundwater wells are present, identify # of wells and designated uses:

☐ Other Use _____ Onsite Groundwater Wells? _____ (Y?N)

Briefly describe the proposed use and degree of contact with public, livestock, or food crops:

If groundwater wells are present, identify # of wells and designated uses:

Storage (See Note Below)

Will onsite storage of recycled water occur? ☐ Yes ☐ No

Describe the type of storage facilities and their capacities:

Note: If recycled water will be stored in a pond, the application must include an operations and maintenance (O&M) plan that details maintenance activities, design overflow conditions, and the drainage location during overflows and/or maintenance.

Mixing With Other Water Sources

Will the recycled water be mixed with any other water sources? ☐ Yes ☐ No

Describe the water sources that will be combined with recycled water:

Cross Connection Control

An initial cross-connection survey and test must be performed to receive a Recycled Water Use Permit.

Has the cross-connection survey and testing been completed? ☐ Yes ☐ No

When was the survey/testing completed? _____

Backflow prevention devices? _____

Attach the cross-connection survey and testing report to this form. Locate any backflow prevention devices on the attached site plan. Briefly describe cross-connection control efforts completed or underway.

Appendix B. Recycled Water Program Rules and Regulations

City of Hesperia Recycled Water Program Rules and Regulations

The rules and regulations were excerpted from the General Water Reclamation Requirements for Recycled Water Use, Order WQ 2016-0068-DDW, and CCR Titles 17 and 22. However, the list is not comprehensive and Users are still subject to all applicable regulations.



1. The treatment, storage, distribution, or reuse of recycled water shall not cause or contribute to a condition of pollution as defined in Water Code section 13050(l) or nuisance as defined in Water Code section 13050(m).
2. No recycled water shall be applied to areas during periods when soils are saturated.
3. Areas irrigated with recycled water shall be managed to prevent ponding.
4. If recycled water use creates ponding or other adverse conditions in public locations, a notification sign may be needed. User will provide appropriate signs for posting, which shall be approved by the City of Hesperia prior to installation.
5. The recycled water shall not be applied so as to cause runoff to or degradation of any water body or wetland.
6. Recycled water shall not be allowed to escape from the designated use area(s) as surface flow that would either pond and/or enter surface waters. Violations of WQ 2016-0068-DDW or misuse of recycled water that results in an unauthorized discharge to a storm drain or waterway could result in the loss of the City of Hesperia recycled water connection (or fill-up) privileges and/or fines issued by the Lahontan Regional Water Quality Control Board.
7. Spray or runoff shall not enter a dwelling or food handling facility, and shall not contact any drinking water fountain, unless specifically protected with a shielding device. The spray or runoff shall not enter any place where the public may be present during irrigation.
8. No recycled water shall be discharged from holding tanks, storage ponds, or other containment other than for reuse permitted by the City of Hesperia.
9. No irrigation with or application of recycled water shall take place within 50 feet of any domestic water supply well, unless specific well head protections are implemented.¹

¹ See CCR Title 22 Section 60310 for required protection.

**City of Hesperia
Recycled Water Program
Rules and Regulations (Continued)**



10. If recycled water is used for a cooling system that creates a mist that could come into contact for employees or members of the public, the cooling system shall use a drift eliminator and treat recirculating water with a biocide to minimize growth of micro-organisms.
11. No impoundment of recycled water shall occur within 100 feet of any domestic water supply well.
12. All use areas that are accessible to the public shall be posted with signs. The signs must be of a size no less than 4 inches high by 8 inches wide that include the following wording: "RECYCLED WATER – DO NOT DRINK" and display an international symbol.² Contracted User will provide appropriate signs for posting, which shall be approved by the City of Hesperia prior to installation.
13. The portions of the recycled water system accessible by the general public shall not include any hose bibs. Only quick couplers that differ from those used on the potable water system shall be used.
14. If recycled water is used for irrigation, application to the use area shall be at an agronomic rate that considers soil, climate, and plant demand.

In addition, application of recycled water and use of fertilizers shall be at a rate that takes into consideration nutrient levels in the recycled water and nutrient demand by plants.
15. An operations plan must be developed and implemented to detect and correct leaks within 72 hours or the release of 1,000 gallons, whichever comes first.
16. There shall be no cross-connection between potable water supply and piping containing recycled water. All users of recycled water shall provide for appropriate backflow protection for potable water supplies as specified in CCR Title 17, section 7604 or as specified by State Water Resources Control Board, Division of Drinking Water.

² International symbols (alternative wording and symbols can be approved):



**City of Hesperia
Recycled Water Program
Rules and Regulations (Continued)**



17. All sprinkler heads must be properly designed and aimed to prevent runoff and over-spray.
18. All above ground equipment, including pumps, piping, storage reservoirs, tanker trucks, and valves, which may at any time contain recycled water, shall be appropriately marked to differentiate them from potable facilities (i.e., purple pipe, wrapped with purple tape, tags, signs).
19. Any storage facility containing recycled water for reuse applications shall be managed in a manner to control odor or nuisance conditions.
20. All recycled water storage ponds shall be adequately protected from erosion, washout, and flooding from a 24-hour rainfall event having a predicted frequency of once in 25 years.
21. All recycled water Users must complete a Recycled Water Use Permit Application (trucked and metered Users). The Users must agree to operate their recycled water systems according to condition specified in the General Water Reclamation Requirements for Recycled Water Use (Order WQ 2016-0068-DDW). All Users are required to perform periodic site inspections, submit self-monitoring reports, and notify the City of Hesperia if an emergency or permit violation occurs.
22. Recycled water availability is contingent upon current agreements that the City of Hesperia may have with contracted Users. The flow in recycled water distribution lines may fluctuate depending on plant operations throughout the day.
23. The City of Hesperia (at 760-947-1000 or at 760-947-7742) and VVWRA (at 760-246-8638) must be contacted immediately if a violation of the above requirements poses risk to surface water quality, groundwater quality, or public health.

Appendix C. Site Inspection Report

City of Hesperia Recycled Water Program Site Inspection Report



Recycled Water User: _____

Name of Inspector: _____

Date and Time of Inspection: _____

Inspection of User Operations

Note: Use the space provided under each question to explain any 'yes' answers.

Any evidence of runoff from the use site?	<input type="checkbox"/> yes	<input type="checkbox"/> no
Any odors detected from recycled water use?	<input type="checkbox"/> yes	<input type="checkbox"/> no
Any ponding of recycled water?	<input type="checkbox"/> yes	<input type="checkbox"/> no
Any evidence of mosquito breeding?	<input type="checkbox"/> yes	<input type="checkbox"/> no
Are warning signs properly posted?	<input type="checkbox"/> yes	<input type="checkbox"/> no
Any evidence of overspray into public use areas?	<input type="checkbox"/> yes	<input type="checkbox"/> no
Any leaks or breaks in irrigation system?	<input type="checkbox"/> yes	<input type="checkbox"/> no
Any evidence of overflows, dike erosion, or improper management of storage ponds?	<input type="checkbox"/> yes	<input type="checkbox"/> no

Describe any problem(s) below and attach a site map, if necessary, to locate the problem area(s).



**City of Hesperia Recycled Water Program
Site Inspection Report (Cont.)**

Verification of Permit Conditions

Have there been any operational or equipment changes at the site? ☐ yes ☐ no

Has there been a change in recycled water use? ☐ yes ☐ no

Have the reuse site boundaries changed? ☐ yes ☐ no

Has there been a change in Recycled Water Supervisors? ☐ yes ☐ no

Has the User completed Self-Monitoring Reports? ☐ yes ☐ no

If the problems noted above are significant violations of permit conditions, a Significant Violation Report must be prepared and the Regional Water Board contacted within 24 hours. If the site operations are substantially different from the original permit conditions, an amended Recycled Water Use Permit should be prepared and issued to the user.

Signature of Inspector

Date

A copy of this inspection report and the Significant Violation Report (if prepared) must be given to the Recycled Water Site Supervisor along with instructions and a deadline for correction of any deficiencies.

Copy of Site Inspection Report given to the User's Recycled Water Site Supervisor? ☐ yes

Date

Recommended corrective actions:

Deadline for Corrective Actions: _____

Appendix D. Significant Violation Report

If a significant violation occurs, the Regional Water Quality Control Board must be notified within 24 hours [(760) 241-7353]. If there is a release or threatened release of hazardous materials to surface waters, Cal OES must be contacted as soon as knowledge is obtained and cleanup/emergency medical measures are not impeded [(800) 852-7550 or (916) 845-8911].

Describe the nature of the violation (attach a map if clarification is needed):

Describe the actions prescribed to eliminate the violation and prevent future occurrences:

Name of User Representative contacted:

City of Hesperia Recycled Water Program
Significant Violation Report (Cont.)



Follow-up inspections must occur until the violations are corrected.

Follow-up Record

Follow-up Inspection Completed: _____
(Date)

Inspection Completed By: _____
(Name of the City Recycled Water program Representative)

Was violation corrected?

If not, explain why it was not corrected and when the correction will occur:

**Record of Correspondence with the
Regional Water Quality Control Board and Cal OES**

The Regional Water Quality Control Board may require a follow-up report to describe actions that were taken to correct the violation(s).

☐ Phone Call Made to the Regional Water Board within 24 hours.

Date and Time of Call: _____

Name of Regional Water Board

Representative: _____

☐ Written Report Sent to the Regional Water Board.

Date Sent: _____

☐ Phone Call Made to Cal OES

Date and Time of Call: _____

Control Number: _____

☐ Follow-up Report Sent to the to the Regional Water Board.

Date Sent: _____

Notes:

Appendix E. User Self-Monitoring Report

City of Hesperia Recycled Water Program Recycled Water User Self-Monitoring Report

Completion of this report is required monthly when recycled water is used. The observations can be made on any day during operation of the recycled water system. If problems are observed during this inspection or on any other operating day, the City of Hesperia Recycled Water Program Coordinator, (760) 947-1451 and VVWRA Coordinator, (760) 246-8638 must be contacted immediately.



Date of Observation: _____

Time of Observation: _____

Inspection/Observation Sites

Note: These sites are designated in your Recycled Water Use Permit.

Check all sites used/inspected during the month. Estimate amount of recycled water applied to each site. Attach additional pages if needed.

Land Sites:

L-1

☐

L-2

☐

L-3

☐

L-4

☐

Volume
Applied

:

Volume
Applied:

Volume
Applied:

Volume
Applied:

Pond Sites:

P-1

☐

P-2

☐

P-3

☐

Cross-Connection Inspection

Have any plumbing modifications or breakages occurred that may create a cross-connection?

☐ Yes

☐ No

If yes, how will this problem be corrected?

Designated Recycled Water Use

Have there been any changes in recycled water use from those approved in your Recycled Water Use Permit?
(for example: new vegetation, irrigation system, additional acreage, public access)

☐ Yes

☐ No

If yes, describe the changes.

**City of Hesperia Recycled Water Program
Recycled Water User Self-Monitoring Report (Cont.)**



Runoff

Any evidence of runoff observed?

☐ Yes ☐ No

If yes, describe the evidence of runoff and estimate the volume of runoff. Locate the problem areas on an attached site map.

Odors

Any odors present that are related to recycled water use?

☐ Yes ☐ No

If yes, describe the odor & estimate source/direction of travel.

Ponding

Any ponding of recycled water?

☐ Yes ☐ No

If yes, describe existing conditions, locate the ponding areas on an attached site map.

Evidence of mosquitoes?

☐ Yes ☐ No

If yes, describe the evidence and locate the areas on an attached site map.

Signage

Are recycled water use signs properly posted at all site entrances, employee assembly areas, recycled water storage ponds? Are all of the above-ground recycled water distribution facilities marked with tags or wrapped with purple tape?

☐ Yes ☐ No

If no, explain how this problem will be corrected.

**City of Hesperia Recycled Water Program
Recycled Water User Self-Monitoring Report (Cont.)**



Leaks and/or Breaks in Equipment

Any leaks or breaks in the recycled water distribution system?

☐ Yes ☐ No

If yes, describe the problems below and locate the leaks or broken systems on an attached map.

Storage Ponds

Any evidence of overflows, leaks or dike erosion?

☐ Yes ☐ No

If yes, describe the problems below and locate them on an attached site map.

Repairs and/or Operational Changes

Have the above-noted deficiencies been corrected?

☐ Yes ☐ No

If no, what are the plans and timeline for completion?

If yes, what work was done?

City of Hesperia Recycled Water Program
Recycled Water User Self-Monitoring Report (Cont.)

Certification



"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

This report must be signed by the Recycled Water Site Supervisor.

Signature: _____

Print Name: _____

Title: _____

Date: _____

Name of Person Conducting Inspection:

(if different than the Recycled Water Site Supervisor)

Appendix F. Cross-Connection Test Report and Backflow Prevention Device Test Report

City of Hesperia Recycled Water Program Cross-Connection Control Investigation & Test Report



Recycled Water User: _____

Site Address: _____

Form Completed by: _____

Test Date: _____

Site Cross-Connection Testing History

To be completed prior to testing

First cross-connection test for this site? ☐ Yes, then skip to "Today's Scheduled Testing"
☐ No, then continue

Date of last Cross-Connection Control Investigation: _____ ☐ passed ☐ failed

Date of last complete testing (Parts I & II): _____ ☐ passed ☐ failed

If the User's system has failed in the past, attach a copy of the failed "Test Report."

Today's Scheduled Testing

☐ Part I (Cross-Connection Investigation) ☐ Part II (Cross-Connection Control Test)

*Note: Initial test consists of Parts I and II. Thereafter, Part I is required annually and
Part II is required at least once every 4 years.*

Names of Inspection Team Members

Recycled Water Program Inspector (if present): _____

A.W.W.A. Certified Cross-Connection Control Specialist: _____

Recycled Water Supervisor (or representative): _____

Part I: Cross-Connection Control Investigation

Yes	No	For any "No" response, an explanation must be given below under No. 7.
<input type="checkbox"/>	<input type="checkbox"/>	1a. Did User provide record drawings of recycled and potable water systems?
<input type="checkbox"/>	<input type="checkbox"/>	1b. Did the inspection team review the drawings?
<input type="checkbox"/>	<input type="checkbox"/>	2a. Did the team discuss changes made to recycled and potable system since the last test?
<input type="checkbox"/>	<input type="checkbox"/>	2b. Have the changes (from 2a) been recorded on the drawings?
<input type="checkbox"/>	<input type="checkbox"/>	2c. Did the team visually inspect changes to verify absences of cross-connections?
<input type="checkbox"/>	<input type="checkbox"/>	3a. Did the team visibly account for all backflow prevention devices on site (inside and outside)?
<input type="checkbox"/>	<input type="checkbox"/>	3b. Have all backflow preventers been tested annually according to California Title 17 regulations?
<input type="checkbox"/>	<input type="checkbox"/>	4a. Did the team field-check the location of the recycled water meter and potable water meter?
<input type="checkbox"/>	<input type="checkbox"/>	4b. Do all meters appear to be correctly installed?
<input type="checkbox"/>	<input type="checkbox"/>	4c. Are the water meters free of visible cross-connection?
<input type="checkbox"/>	<input type="checkbox"/>	5a. Did the User inform the inspector on who has access to the recycled water system?
<input type="checkbox"/>	<input type="checkbox"/>	5b. Did the team discuss needed training of recycled water supervisor and workers?
<input type="checkbox"/>	<input type="checkbox"/>	6a. Are the recycled water quick couplers and other recycled water access points easily identified by recycled water signs or color coding?
<input type="checkbox"/>	<input type="checkbox"/>	6b. Is a "Warning" sign posted where the public enters the recycled water use area?
<input type="checkbox"/>	<input type="checkbox"/>	6c. Are all the portable fixtures and hoses (used on the recycled water system) permanently labeled to indicate they are for use only with recycled water?
<input type="checkbox"/>	<input type="checkbox"/>	6d. Are appropriate "Warning" signs in place at recycled water meters, valve boxes, controllers?
<input type="checkbox"/>	<input type="checkbox"/>	6e. Are all the "Warning" signs in good condition, legible, and visible?

City of Hesperia Recycled Water Program
Cross-Connection Control Investigation & Test Report (Cont.)



7. An explanation must be given for any "No" response posted above.
List the comments and explanations in the space provided below and identify them by question number.

Results of the Cross-Connection Control Investigation

☐ PASSED

☐ FAILED

The following actions must be completed by the User prior to re-testing. When the corrections are made, the User must contact the Certified Cross-Connection Control Specialist to schedule another inspection.

Required Date of Completion: _____

Required Corrective Actions:

Inspection Completed By: _____
*Signature of Certified Cross-Connection
Control Specialist*

Certification Number: _____

Date: _____

Report Received By: _____
Signature of User Representative

Print Name and Title: _____

Date: ____

Copies: _____ Recycled Water User
 _____ City of Hesperia Recycled Water Program
 _____ Cross-Connection Control Specialist

City of Hesperia Recycled Water Program

Cross-Connection Control Investigation & Test Report (Cont.)



Part II: Cross-Connection Control Test

Testing of the Potable Water System:

Check Box when Complete

- | | | |
|----------|--|--------------------------|
| Step 1. | Turn off recycled water system at meter. | <input type="checkbox"/> |
| Step 2. | Open all valves on the recycled water supply, downstream of the meter. | <input type="checkbox"/> |
| Step 3. | Depressurize and drain (if possible) recycled water system.
Record pressure in recycled water system after depressurizing: _____ psi | <input type="checkbox"/> |
| Step 4. | Confirm potable system is activated and pressurized by operating a few potable fixtures.
Record pressure in potable water system: _____ psi | <input type="checkbox"/> |
| Step 5. | Potable water system must remain pressurized after recycled water system has been depressurized and while Steps 6 through 11 are performed. | <input type="checkbox"/> |
| Step 6. | Identify the location, and obtain access to, all the potable water fixtures to be tested in Steps 7 and 8. | <input type="checkbox"/> |
| Step 7. | Open all (one at a time) outdoor potable water fixtures and note any fixtures that have no flow. | <input type="checkbox"/> |
| Step 8. | Open all indoor faucets and drinking fountains, and note any that have no flow.
List all potable fixtures with no flow observed in Steps 7 and 8:

_____ | <input type="checkbox"/> |
| Step 9. | Open (one at a time) all fixtures on the recycled water system.
Note if water flows through any of the fixtures and the location of the affected fixtures:

Quick connects _____ Sprinkler heads _____

Other type of fixtures _____ | <input type="checkbox"/> |
| Step 10. | If no flow was found in Steps 8 and 9, proceed to the "Results" section. Observed flow may indicate a cross-connection. However, flow discovered in Steps 8 and 9 may be caused by incomplete drainage of the recycled water system. The test shall be extended at this point to confirm the source of the flow. | <input type="checkbox"/> |
| Step 11. | If a valid cross-connection is discovered, continue with testing of the recycled water system to determine the locations of the cross-connections. After the testing is completed, turn off the supply of recycled water, depressurize the system, and disinfect the potable water system (per ANSI/AWWA guidelines). Note locations of cross-connections below:

_____ | <input type="checkbox"/> |

City of Hesperia Recycled Water Program
Cross-Connection Control Investigation & Test Report (Cont.)

Results of the Cross-Connection Control Test

☐ PASSED

☐ FAILED

The following actions must be completed by the user prior to re-testing. When the corrections are made, the User must contact the Certified Cross-Connection Control Specialist to schedule another inspection.

Required Date of Completion: _____

Required Corrective Actions:

Inspection Completed By: _____
*Signature of Certified Cross-Connection
Control Specialist*

Certification Number: _____

Date: _____

Report Received By: _____
Signature of User Representative

Print Name and Title: _____

Date: _____

Copies: _____ Recycled Water User
_____ City of Hesperia Recycled Water Program
_____ Cross-Connection Control Specialist



Appendix G. Recycled Water Use Permit and Conditions

City of Hesperia Recycled Water Program Recycled Water Use Permit



This permit must be available for inspection at all times. The permit is subject to all prohibitions, specifications, and provisions of Water Quality Order No. WQ 2016-0068-DDW. If any problems with the recycled water system are observed, the City of Hesperia Recycled Water Program Coordinator, (760) 947-1451, and VVWRA Coordinator, (760) 246-8638, shall be contacted immediately.

Permit Number: _____ Expiration Date: _____

Effective Date: _____

User Information

Issued to: _____

For Use at: _____

Emergency Contact Information:

Recycled Water Supervisor: _____

Phone Number (1): _____ Phone Number (2): _____

Type of Water Reuse

Application:

☐ landscape irrigation ☐ agricultural irrigation ☐ industrial use ☐ other

Specific use of the water: _____

Certification

I hereby certify under penalty of perjury that the information provided in this permit and any attachments is true and accurate to the best of my knowledge.

Name of User Representative: _____

Signature of User: _____ Title: _____ Date: _____

Name of Producer Representative: _____

Signature of Producer: _____ Title: _____ Date: _____

**City of Hesperia Recycled Water Program
Recycled Water Use Permit
Additional Terms And Conditions**



Permit Number: _____

Issued To: _____

Effective Date: _____

Expiration Date: _____

Monitoring Requirements

☐ User Self-Monitoring

Frequency: _____

☐ Recycled Water users Self-Monitoring Report *(if checked, copy was given to permittee)*

Designated Monitoring Sites: _____

|| See attached site plan for locations of Land (L) or Pond (P) monitoring sites

Monitoring by the City of Hesperia

Frequency: _____

Recycled Water Program Requirements

☐ Copy of CCR Title 17 and Title 22 *(if checked, copy was given to Permittee)*

☐ Copy of Water Quality Order No. WQ 2016-0068-DDW *(if checked copy was given to Permittee)*

☐ City of Hesperia Recycled Water Program Rules and Regulations
(if checked, copy was given to Permittee)

☐ VVWRA Recycled Water Program Ordinance No. 006 *(if checked, copy was given to Permittee)*

☐ List of A.W.W.A. Certified Cross-Connection Control Specialists
(if checked, copy was given to Permittee)

Special Permit Conditions

Initial Conditions and Term:

On-going Conditions: