

Recycled Water Customer Workshop

SAWS Recycled Water Team

March 1, 2017



Purpose of Workshop

Overview

- Recycled water program
- Rules & Regs: what's new and what's still in use
- Purpose of an agreement - obligations and notification
- Best management practices for recycled water use
- Planned improvements for the system
- Networking opportunity for users
- Update Point of Contact list
- Answer any questions



Purple Pipe Award

presented by

San Antonio Water System

to recognize

Trinity University

**For your professional contribution to the
SAWS Recycled Water Customer Program**

March 1, 2017

Bruce Rathburn
Cross Connection & Control



Darren Thompson
Director - Water Resources



Team Approach to Program

- Customer Development
- Recycle Operations & Treatment Support
- Backflow Protection/Cross Connection Control
- Emergency / Operations Control Center
 - call **704-SAWS**
- Master Planning & CIP
- Construction Inspections
- Production & Treatment Engineering



Definitions



Black Water – No! Nein! Niet! Ne! Não! Not!

- water from toilets and urinals



Grey Water - No! Nein! Niet! Ne! Não! Not!

- untreated water from showers, sinks, and clothes washers – new rules have been put in place



Reclaimed/Reuse/Recycled Water – Yes!

- highly treated effluent that meets or exceeds stream standards

Best Management Practices

Water Quality

- Warm season grasses tolerant of salt residue
- Occasional leaf burn/species dependent – minimize spray arc
- No empirical evidence on salt build-up within soil in our ecosystem
- Small amount of nitrogen

Regulatory Agencies

- TAC 210 – Rules on Reclaimed Water – purple, purple, purple
- TAC 344 – Rules on Irrigation design & maintenance and on Irrigators
- City of San Antonio – Chapter 34 – Waste & Drought Rules

Best Management Practices

When can I water?

- 7 days a week
- Not from 11 am – 7 pm
- During Drought Stages
 - **Must** be 100% recycled water and have appropriate signage for 7 days a week
 - We will check.....

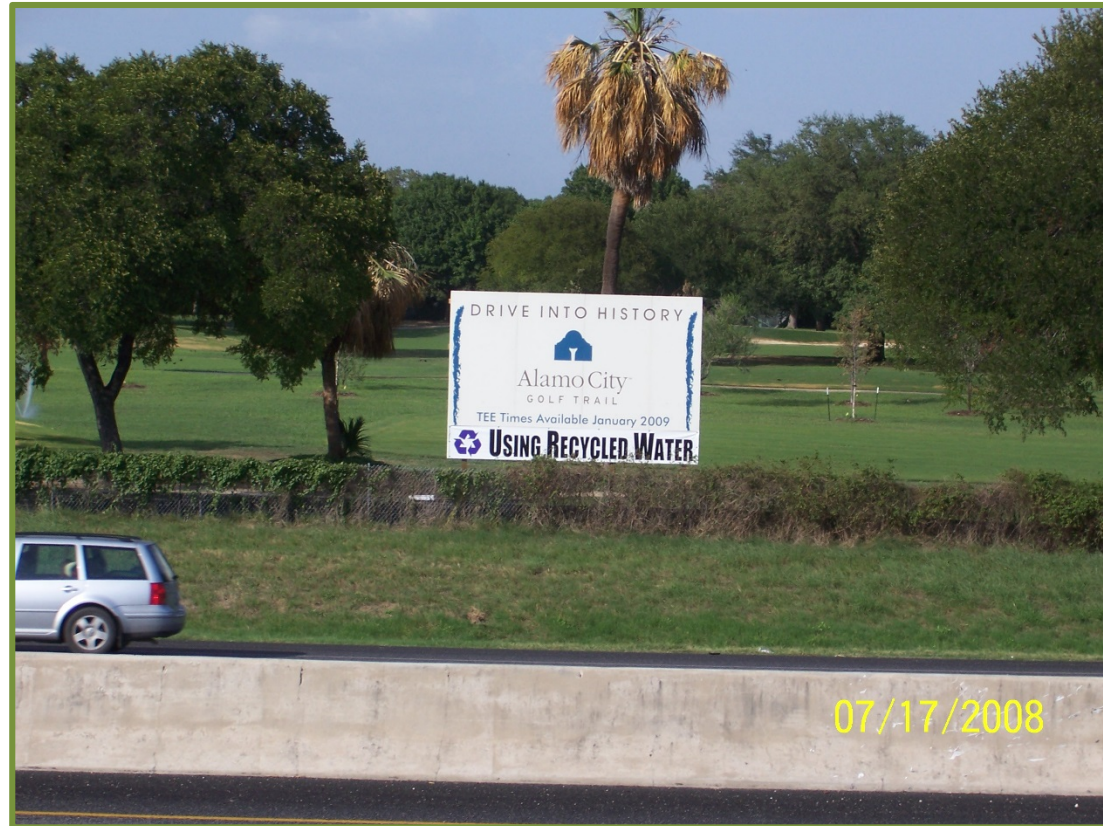


Can I still receive a citation?

- Yes, for the following...
 - Water running down the sidewalk, street and parking lot
 - Watering between 11 am and 7 pm
 - No signage

Best Management Practices

Getting the signage “just right”



Best Management Practices

Examples of Signage

Must be in a location where the public can see it

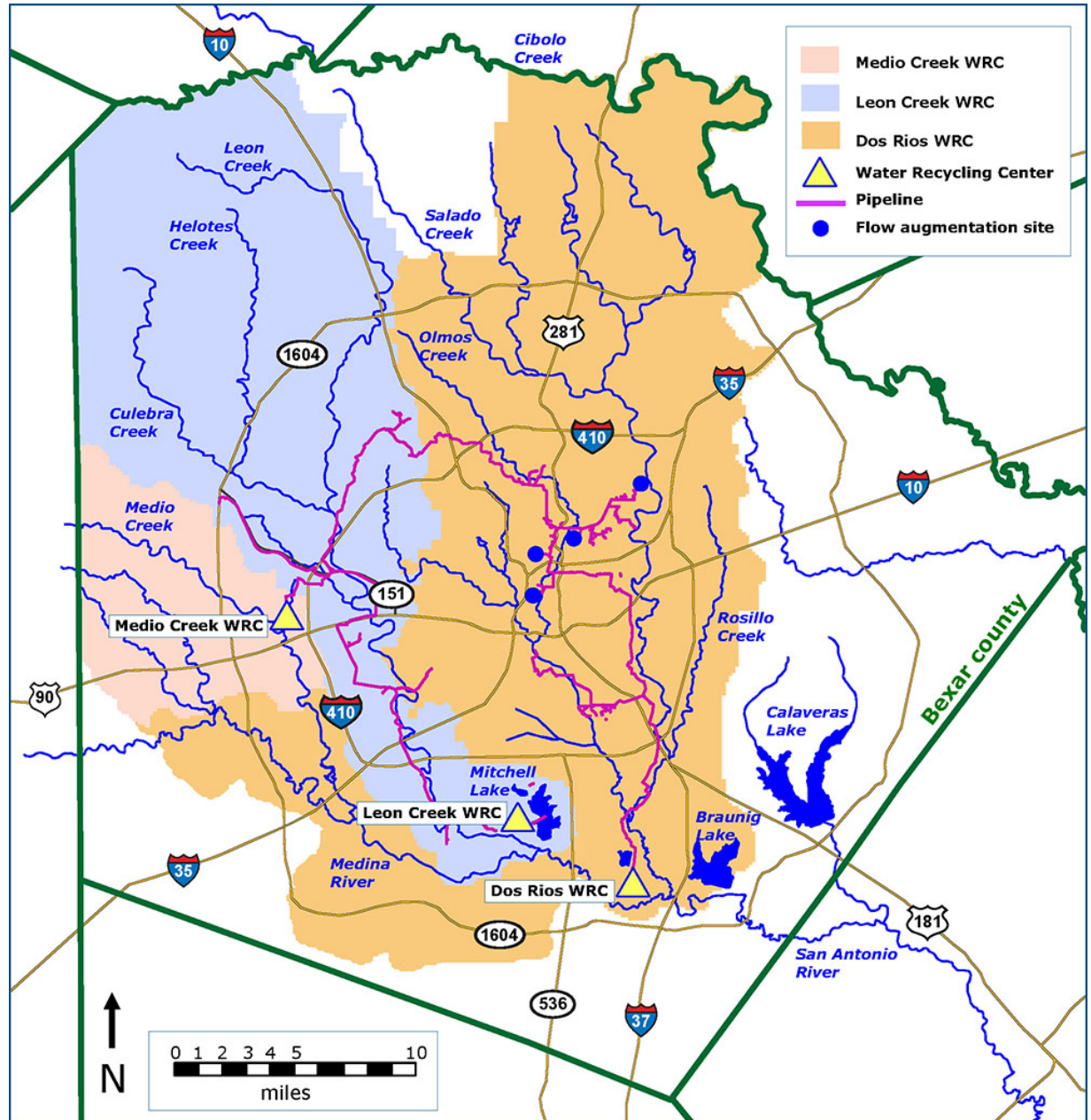


Remember!

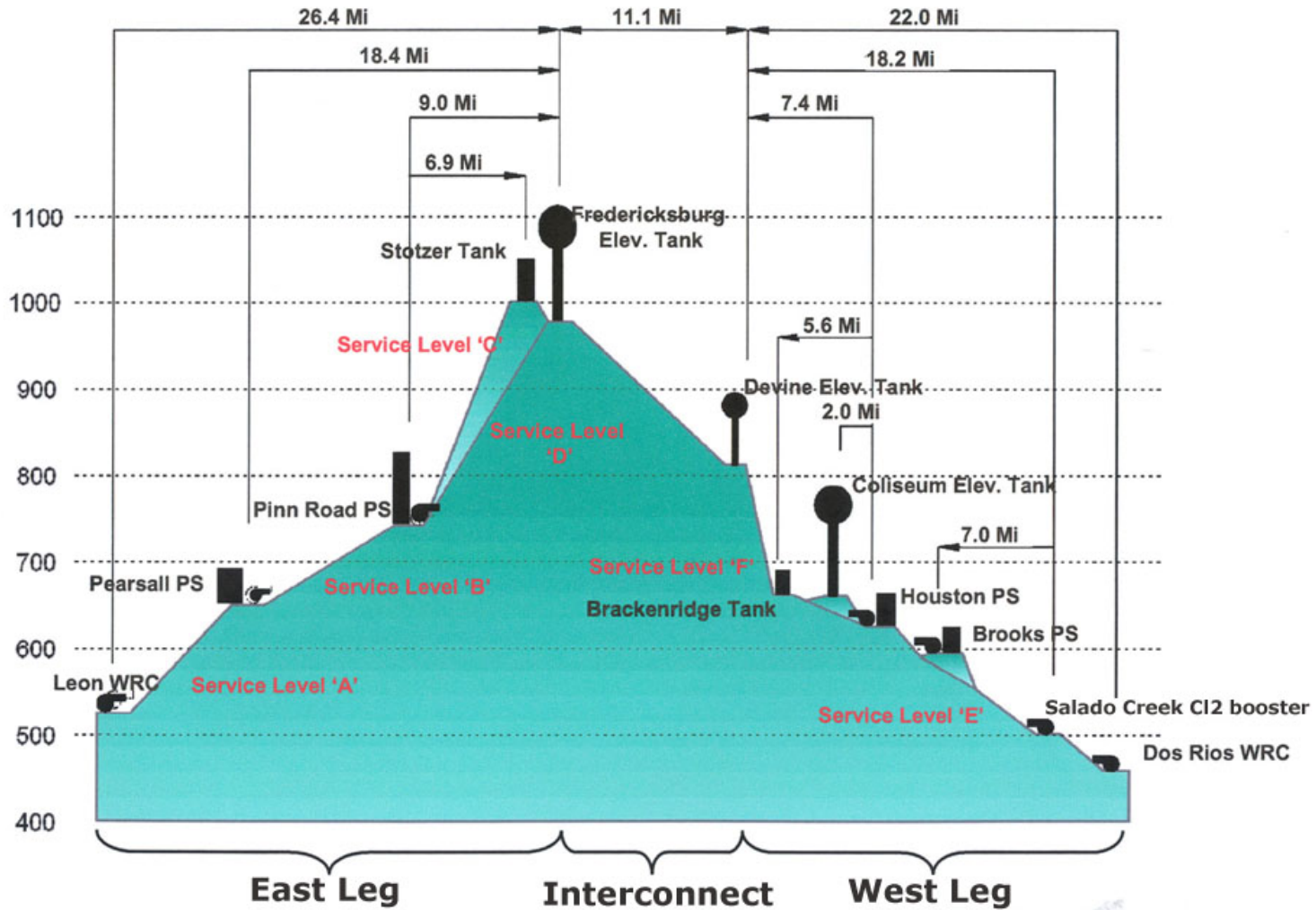
More plants are killed by
over-watering than by
under-watering



SAWS Recycled Water System



How System is Laid Out



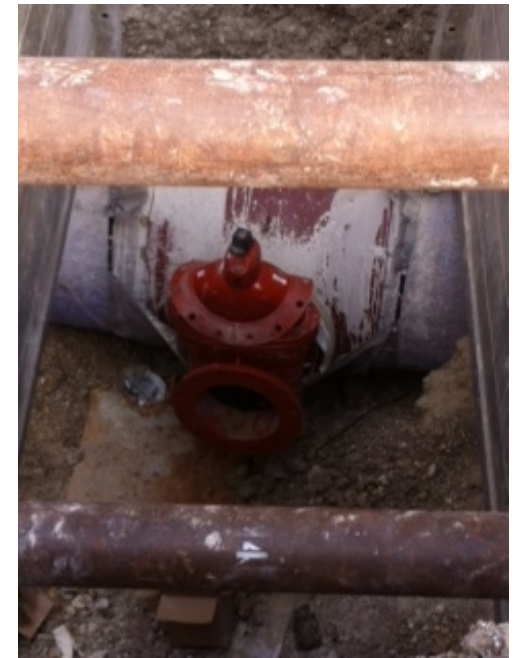
Types of Services

- Irrigation
- Industrial
 - Cooling towers
 - Manufacturing processes
- Dust suppression
- Stream augmentation



New Connections in 2016

- Vantage at Brooks
- The Lodge at Westover Hills
- VA – Fort Sam Houston National Cemetery additional connection



Recycled Water Quality

TAC Chapter 210 Standards		
Constituent	Regulatory Standard	SAWS 2016 Analytical Results
BOD 5	5 mg/l	2.08 mg/l
Turbidity	3 ntu	0.97 ntu
E-coli form	< 20 cfu/100 ml	1.35 cfu/100 ml

Additional Contractual Standards		
Constituent	Contractual Standard	SAWS 2016 Analytical Results
NH3-N	< 2.0 mg/l	0.58 mg/l
pH	6.0 to 9.0 su	6.3 to 8.6 su
Total Suspended Solids (TSS)	< 15 mg/l	1.54 mg/l
Total Dissolved Solids (TDS)	< 1500 mg/l	579 mg/l
Sodium Adsorption Ratio (SAR)	< 5 meq/l	2.59 meq/l
Residual Sodium Carbonate (RSC)	< 1.5 mg/l	0 meq/l

Rules and Regulations

- Regulatory guidelines
- Chapter 210
- Additional requirements
- Shut down procedure
- Protocol for compliance assurance

Regulatory Guidelines

- Texas Administrative Code Chapter 210 for Reclaimed Water
- Texas Administrative Code Chapter 290 for Potable Water
- TAC 344 (Irrigation Rules)
- Local Chapter Code 34 and TAC 217
- SAWS Backflow and Cross-Connection Control Program
- AWWA Cal/Nevada Guidelines
- USEPA 2004 Guidelines for Reuse Water
- International Plumbing Code (2015 with amendments)



Chapter 210 Particulars

- Separation requirements
- Texas PE requirement for stamp and signature
- Safe Drinking Water Act
 - Cross connection control & backflow back siphonage
 - Customer service inspections



Chapter 210 Particulars

- Contract
- Uses of recycled water
- Color coding
 - Potable and recycled water
 - Above and below grade
- Signage



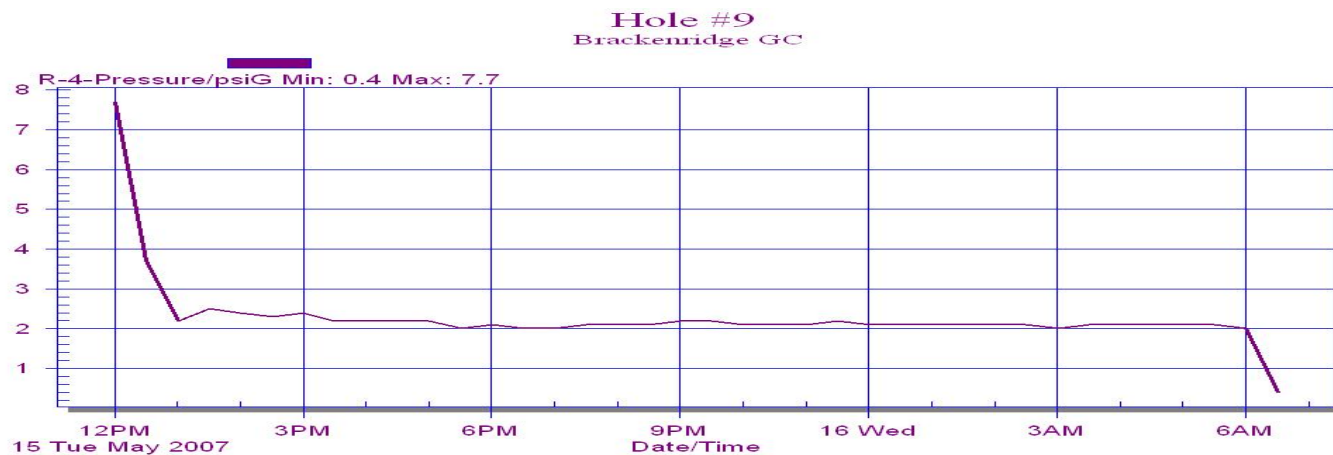
Additional Requirements

- No hose bibs, faucets allowed off of irrigation system
- Keyed access only (quick-couplers are acceptable)
- **Spill notification**
 - call 704-SAWS



Annual Shutdown Test Procedure

- Contact customer 30-60 days ahead
- Customer provides T&M reports for ALL containment devices BEFORE shutdown
- Scheduling of customer personnel (1/1)
- Install data loggers and take samples
- Perform two way shutdown on potable and recycled water services and restore service



Protocol for Compliance Assurance

Protocol for Compliance Assurance

And

Steps to Service Interruption

- I. For the initial annual shutdown notice for any customer, an email to the designated POC should be sent suggesting/requesting a date to perform the annual shutdown testing 30 days ahead of the anniversary date for the customer. A firm date should be confirmed and agreed to, documented by email, by both parties. **If there is no response within 5 days, step II will be instituted.**
- II. Step II is now broken down into two groups.
 - a. If there is no response for a Step I appointment date, a certified letter will be sent to the customer POC requesting a response to establish an appointment within 14 days. A copy of the initial email will be attached. Or:
 - b. If the customer does not provide the required documentation and is not ready to perform the exercise on the appointed date, a certified letter will be sent to the POC requesting that the customer establish a new appointment within 14 days of the letter's receipt and be ready to provide all needed documentation and staff necessary to accomplish the requirement. A copy of the initial email will be attached.
- III. Step III is also broken into two groups.
 - a. If the customer is ready and all information requested/required is provided on the appointed time, everything is good. The results are documented and we move forward thanking the customer for cooperating.
 - b. If there is no customer response from II a. above, or if the customer has not completed the required actions to achieve compliance on the established appointment date from II b. above, a certified letter will be generated requiring a 7 day response detailing when the necessary actions to bring the system into compliance will be completed, and the service will be temporarily interrupted (meter turned off in place) at the end of the 7 day period. Copies of all prior letters will be attached and sent also to any higher authority within the customer's chain of command (contract signatory).
- IV. If there is no response from the customer regarding III b. above, a WO will be generated and the meter will be pulled. The same action will take place if the customer has turned the meter back on without fulfilling their requirements detailed in the letter.

Recycled Water Service Agreement

- Purpose of agreement
 - Obligation of User (Customer)
 - Obligation of Provider (SAWS)
- Technical elements of agreement
- Manage program supply

User Agreement

- Standard language for all agreements
- CPS Energy priority
- Reference to requirements
- Take or pay rate structure

**SAN ANTONIO WATER SYSTEM
RECYCLED WATER SERVICE AGREEMENT**

Effective Date: _____ Contract No. _____

PROVIDER: **USER:**
 San Antonio Water System (SAWS)
 2800 U.S. Hwy 281 North
 P.O. Box 2449
 San Antonio, Texas 78212-2449

For the consideration provided herein, SAWS agrees to supply and User agrees to accept, store and use recycled water service in accordance with the terms and conditions of this Recycled Water Service Agreement (the "Agreement"). This Agreement incorporates and is subject to all of the terms and conditions set out herein as well as all of the following: all applicable Attachments and Appendices attached hereto; the SAWS Recycled Water User's Handbook (the "User's Handbook"), as it may be amended from time to time; the SAWS Cross Connection Control and Backflow Prevention Program, as it may be amended from time to time; and all applicable local, state, and federal statutes, ordinances, and regulations, as they may be amended, now or hereafter in effect ("Applicable Laws"), including, without limitation, Chapter 210 of Title 30 of the Texas Administrative Code and Article VIII of Chapter 34 of the City of San Antonio Code (the "City Code").

This Agreement contains and is subject to the provisions of the Appendices indicated below. In the event of a conflict between this Agreement and any applicable Appendices, the provisions of the applicable Appendices shall control.

Appendix One - Conversion Benefits: Applicable? yes no

Appendix Two - Exchange Documents: Applicable? yes no

Appendix Three - Other: Applicable? yes no

1. Use.

a. General. User covenants and agrees to use the recycled water provided under this Agreement (the "Recycled Water") only as authorized by Applicable Laws, and in accordance with the User's Handbook and the SAWS Cross Connection Control and Backflow Prevention Program.

b. Specific. Notwithstanding other uses authorized under Chapter 210 of Title 30 of the Texas Administrative Code or Chapter 34 of the City Code, User agrees to use the Recycled Water only for construction, commercial, industrial, or irrigation purposes and in accordance with all the terms and conditions of this Agreement. User agrees to use the Recycled Water only for the purpose(s) and in the location(s) described in Attachment A hereto. User agrees to obtain SAWS' written consent prior to using the Recycled Water for a purpose or at a location not described in Attachment A. Any changes to the purpose and location of use of the Recycled Water must be reflected in a substitute Attachment A and attached hereto. User agrees to take steps to minimize the risk of inadvertent human exposure to the Recycled Water. SAWS may terminate this Agreement immediately, in its sole discretion, if SAWS determines that User has failed to use the Recycled Water in accordance with Applicable Laws, this Agreement, and/or Attachment A.

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Technical Elements

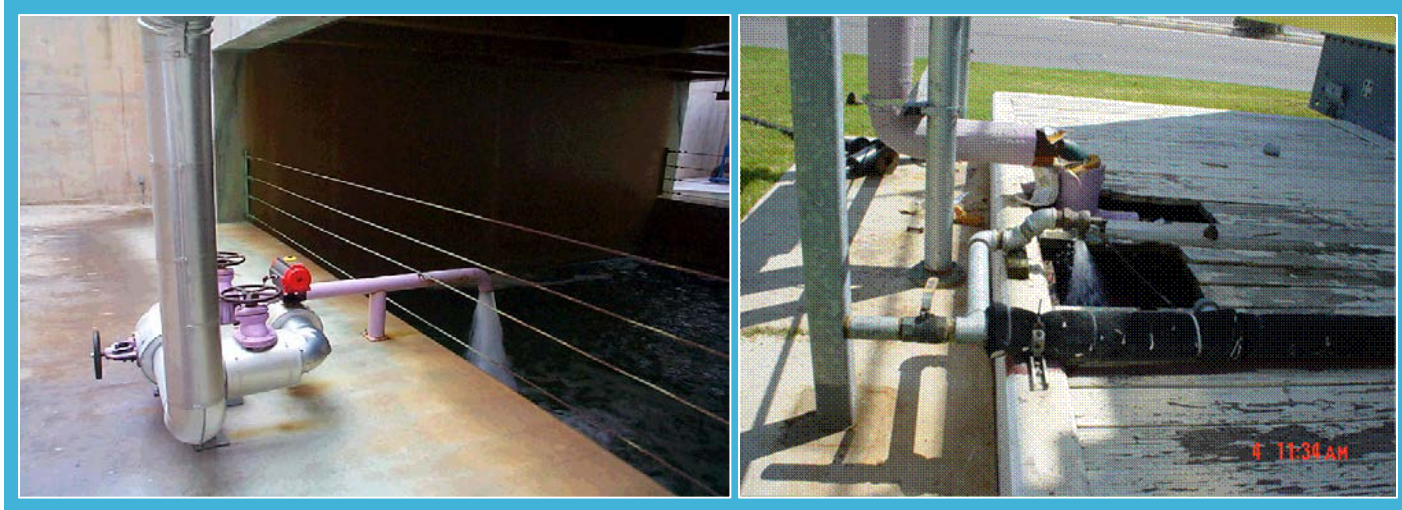
- Can the system meet customer demand?
- Hydraulic model
- Water quality



Best Management Practices

Cooling Towers

- Ortho-phosphates/nitrates
- Microbial control
- Misting concerns
- Nutrients



Best Management Practices

Irrigation

- Onsite storage ponds
- Onsite distribution system
- Chlorides and sodium



What's New and Planned

- Brooks City Base
- Port San Antonio
- Soccer fields at Pearsall Park
- Candlewood Suites



Summary

- SAWS provides Type I recycled water
- Permits, inspections, and signs
- Annual certification
- Protection of water supplies and cross connections
- Notification of spills and modifications
- Communication
- Planning for success

Questions and Discussion



Recycled Water Customer Workshop

SAWS Recycled Water Team

April 20, 2016

