

2003 ANNUAL SYMPOSIUM

XXV SYMPOSIUM

Presented by:



Water Reuse: A Resource Without Borders



Co-Sponsored by:



American Water Works Association



September 7 - 10, 2003 • San Antonio, Texas

2003 Annual Symposium

September 7th-10th
San Antonio, Texas

Marriott Rivercenter

Presented by:



Co-Sponsored by:



American Water Works Association



Special Invitation to Be a Part of the Premier Water Conference Devoted Entirely to Water Reuse

On behalf of the Board of Directors and the Symposium XVIII Planning Committee, we invite you to join us in San Antonio in September for the WaterReuse Association's 2003 Annual Symposium. The WaterReuse Association has successfully completed its transition to a national association as evidenced by our well attended and successful Symposium held in Orlando in September, 2002. We feel confident that this year's Symposium, to be held at the Marriott Rivercenter on San Antonio's world famous Riverwalk, will be an informative, lively, and well attended event. We expect Symposium XVIII to surpass the Orlando conference as the largest WaterReuse Association event held to date.

The Planning Committee selected more than 80 papers for presentation at this year's Symposium. As a result of the number of high quality abstracts received, we decided to convene four concurrent sessions to accommodate more speakers and to ensure that as much valuable information as possible is imparted to attendees. Technical sessions will be devoted to such diverse and relevant topics as membrane bioreactors, indirect potable reuse, health effects, and storage and groundwater issues. A new feature – a Users Forum – has been added in 2003 in response to requests from users of reclaimed water. This session will feature panelists who use reclaimed water for a variety of applications.

As described elsewhere in this brochure, the Opening Session will feature several prominent speakers, including General Eugene Habiger (CEO of the San Antonio Water System), Jack Hoffbuhr (AWWA), Carolyn Ahrens (representing the Water Environment Association of Texas), WaterReuse President Margaret Nellor, and our keynote speaker, Sue Gaines of NASA's Kennedy Space Center.

One of the most popular sessions at recent Symposiums has been the To Drink or Not to Drink panel discussion. This year's debate on the merits of indirect potable reuse will again be moderated by Dr. Jim Crook and will include a number of knowledgeable panelists from all over the U.S. and one from the United Kingdom. This session – the final one – should be lively, informative and provide a fitting capstone for the Symposium.

In addition, those attendees who opt to sign up will be treated to a tour of the San Antonio Water Systems' (SAWS) reuse facilities. This will include SAWS downtown heating and cooling facility (recycled water planned use), a walking tour of the Alamo, and a walking tour of the Riverwalk. The Riverwalk is situated along the San Antonio River, to which SAWS returns more than one billion gallons of recycled water annually.

When one is visiting a city that features as many attractions as San Antonio, one should find time to visit some of them. Local San Antonio attractions include the Alamo, Sea World of Texas, Six Flags Theme Park, the Riverwalk, and the Institute of Texan Cultures. Come to San Antonio and see why this is one of the most popular places to visit in the country.

Once again, we extend our personal invitation to take advantage of this unique opportunity to learn, share, and network with your water reuse colleagues. We look forward to seeing you in San Antonio.

Pablo Martinez
San Antonio Water System

Bart Hines
Carter & Burgess

Symposium XVIII Overview

Sunday, September 7, 2003

9:00 am – 5:00 pm	Exhibitor Set-up
9:00 am – 7:00 pm	Registration
9:00 am – 12:00 pm	WaterReuse Association Committee Meetings
1:00 pm – 4:30 pm	Four Concurrent Technical Sessions <ul style="list-style-type: none">➤ Treatment Technologies➤ Financial Considerations➤ Planning for Water Reuse➤ Planning for Urban & Industrial Reuse
2:30 pm – 3:00 pm	Networking Break
5:00 pm – 7:00 pm	Exhibition
5:30 pm – 7:00 pm	Meet and Greet Exhibitors' Welcome Reception (in Exhibit area)

Monday, September 8, 2003

7:00 am – 5:00 pm	Registration
7:00 am – 8:00 am	Continental Breakfast (in Exhibit area)
7:00 am – 6:00 pm	Exhibition
8:00 am – 9:45 am	Opening Session, Annual Meeting & Keynote Presentation
9:45 am – 10 am	Networking Break (in Exhibit area)
10:00 am – 12:00 pm	Four Concurrent Technical Sessions <ul style="list-style-type: none">➤ Urban Reuse Issues➤ Water Quality Issues➤ Innovative Uses of Reclaimed Water➤ Membrane Bioreactors
12:00 pm – 1:30 pm	Awards Luncheon
1:30 pm – 5:00 pm	Four Concurrent Technical Sessions <ul style="list-style-type: none">➤ Operational Issues & Disinfection➤ Indirect Potable Reuse➤ Public Education➤ Environmental Reuse
3:00 pm – 3:30 pm	Networking Break (in Exhibit area)
6:00 pm – 8:00 pm	President's Reception at Sunset Station

Tuesday, September 9, 2003

8:00 am – 12:00 pm	Registration
8:00 am – 9:00 am	Continental Breakfast (in Exhibit area)
8:00 am – 9:30 am	Legislative & Regulatory Update
9:30 am – 10:00 am	Networking Break
8:00 am – 12:00 pm	Exhibition
10:00 am – 12:00 pm	Three Concurrent Technical Sessions <ul style="list-style-type: none">➤ Urban & Water Quality Issues➤ Health Effects➤ Storage & Groundwater Issues
10:00 am – 3:30 pm	Operations Tour
1:30 pm – 3:00 pm	Three Concurrent Technical Sessions <ul style="list-style-type: none">➤ Regulatory Considerations➤ Agricultural Reuse➤ Users Forum
3:00 pm – 3:15 pm	Networking Break
3:15 pm – 4:45 pm	To Drink or Not To Drink IV
5:00 pm – 7:30 pm	WaterReuse Foundation Board of Directors Meeting

Wednesday, September 10, 2003

8:00 am – 12:00 pm	WaterReuse Association Board of Directors Meeting
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Special Thanks to Our 2003 Symposium Committee

Pablo Martinez
San Antonio Water System

Bart Hines
Carter & Burgess

Ken Diehl
San Antonio Water System

Mark McNeal
CH2M HILL

Jonathan Vorheis
CH2M HILL

Jeff Arnold
Aqua-Aerobic Systems

Dale Conger
PBS&J

Alan Plummer Jr.
Alan Plummer Associates, Inc.

Bruce A. Lazenby
The Rose Hills Company

Carolyn Ahrens
Booth, Ahrens & Werkenthin, P.C.

Greg Wukasch
San Antonio Water System

Roger Schenk
Camp Dresser & McKee

Fred Arce
San Antonio Water System

David York
Florida DEP

Local San Antonio Attractions

The Alamo

Sea World of Texas

Six Flags Fiesta
Texas Theme Park

River Walk

San Antonio Zoo

San Antonio Missions

Rivercenter Mall

La Villita

Market Square

Witte Museum

Japanese Tea Gardens

Spanish Governor's Palace

Institute of Texan Cultures

Symposium Opening Session

Monday's opening general session will feature a keynote address by Sue Gaines, who heads the Comprehensive Planning Office at NASA's Kennedy Space Center. Ms. Gaines will discuss, among other issues, NASA's challenges and activities in water recycling. Other speakers include Jack Hoffbuhr, Executive Director of the American Water Works Association, and General Eugene Habiger, President and CEO of the San Antonio Water System.

Margaret Nellor, President of the Association, will deliver the Presidential Address and preside over the Annual Membership Meeting.

San Antonio, Texas

San Antonio, the ninth largest city in the United States, has retained its sense of history and tradition, while carefully blending in cosmopolitan progress. Sounds and flavors of Native Americans, Old Mexico, Germans, the Wild West, African-Americans and the Deep South come together to capture the spirit of Texas. Close to eight million visitors a year delight in the discovery of San Antonio's charms.

Marriott Rivercenter

The Marriott Rivercenter is located in downtown San Antonio and is connected to the Rivercenter Mall. It is on the River Walk, with easy access to shopping and entertainment. The 1001-room hotel is one block from the San Antonio Zoo, 5 minutes from the Alamo, and 10 minutes from the airport. Amenities include an indoor and an outdoor pool, fitness center, whirlpool, sauna, putting green, driving range, an on-site restaurant, coffee shop, lounge, and full business services center.

The WateReuse Association has secured a block of rooms at the special nightly rate of \$149.00 per night. For reservations, please call 800-648-4462 and refer to the "WateReuse Group."

Exhibits

Symposium XVIII will feature more than 20 exhibitors who will display the latest technologies, service offerings, and innovations in the water reuse industry. Exhibitors include consulting engineering firms that are engaged in the design of water reuse systems; leading manufacturers of water treatment products and systems for industrial and municipal applications; and utilities such as Pinellas County, (FL), which has an innovative public education and outreach program

Receptions

The Welcome Reception will be held Sunday evening in the exhibit area and will offer Symposium attendees the opportunity to preview the exhibits and to meet-and-greet.

The President's Reception will be held Monday evening at the Saloon in Sunset Station, a beautiful converted train station built in 1902, which is within walking distance of the hotel. Both receptions are included as part of the registration fee.

Awards Luncheon

The Awards Program recognizes excellent water reuse, reclamation, and recycling projects and practitioners. WateReuse will identify projects that advance reuse, have a new reclamation twist, or have made significant contributions to water reuse. The awards will be presented during the Monday luncheon.

In addition to the annual awards, several students from the San Antonio area will receive awards. These students submitted art or poetry in response to a request from the WateReuse Student Awards Committee.

2003 SYMPOSIUM TECHNICAL PROGRAM

Sunday September 7, 2003				
Time	Session S-1 Treatment Technologies Moderator: Harold Schmidt	Session S-2 Financial Considerations Moderator: Dave Requa	Session S-3 Planning for Water Reuse Moderator: Margie Nellor	Session S-4 Planning for Urban and Industrial Reuse Moderator: Mark McNeal
1:00 pm - 1:30	<i>Unrestricted Access Reclaimed Water Treatment Catalog</i> Christianne Castleberry (HDR Engineering)	<i>The Value of Water Reuse in the Urban Watershed</i> Ronald Linsky (National Water Research Institute)	<i>The One, Two, Three's of Developing a Comprehensive Recycled Water Planning Document</i> Guy Carpenter (Carollo Engineers)	<i>Transcending the Fear of Opposition - A New Model for Working With Stakeholders</i> Patricia Tennyson (Katz & Associates)
1:30 pm - 2:00	<i>Factors Driving Rejection of Emerging Micropollutants during MF/RO Treatment Leading to Indirect Potable Reuse - A Literature Review</i> Pei Xu (Colorado School of Mines)	<i>Recycled Water is Cost Effective!</i> Bert Michalczyk (Dublin San Ramon Services District)	<i>Developing a Successful Decentralized Wastewater Treatment and Reuse Strategy</i> Dimitrios Katehis (Metcalf & Eddy)	<i>Water Reuse Utility is Natural Selection for Environmentally Friendly Master Planned Communities</i> Dennis Cafaro (Resource Conservation Systems, LLC)
2:00 pm - 2:30	<i>Filtration Challenges at the Dublin San Ramon Services District: Pilot Testing of New Technologies for Tertiary Recycled Water</i> Paul Friedlander (Whitley Burchett & Associates)	<i>Valuing Reclaimed Water in Arid Regions</i> Steve Rossi (Phoenix Water Services Department)	<i>Integrated Approach to Water Reuse at Hyderabad Metropolitan Water Supply & Sewerage Board</i> Amit Dalal (PA Consulting)	<i>Getting A Grip on Pressure</i> James Dettmer (Malcolm Pirnie)
2:30 pm - 3:00	Break	Break	Break	Break
3:00 pm - 3:30	<i>Point-of-Sale Reuse Wastewater Treatment Facilities - A New Water Source</i> Alan Rimer (Black & Veatch)	<i>South Tampa Area Reclaimed Water (STAR) Project: Phase 2 Planning</i> Charlotte Maddox (PBS&J)	<i>Water Reuse and the Comprehensive Everglades Restoration Plan</i> Steve Sutterfield (US Army Corps of Engineers)	<i>Submerged Attached Growth Bioreactors (SAGB) and Membrane Filtration for Water Reuse</i> Philip Pedros (F.R. Mahony & Associates)
3:30 pm - 4:00	<i>Techniques to Increase Disinfection Capacity of Chlorine Contact Basins Using CFD</i> Sanjay Reddy (Carollo Engineers)	<i>Impact Fee Development Considerations for Reclaimed Water Projects</i> Jason Gorrie (Camp Dresser & McKee)	<i>Water Reclamation as a Water Supply Strategy in Texas</i> Stephen Coonan (Alan Plummer Associates)	<i>Customizing for Industrial Reuse</i> Dan Cearley (Black & Veatch)
4:00 pm - 4:30	<i>Private Company Employs Membrane Bioreactor Technology for Generating High Quality Reuse Water</i> Douglas Thompson (Zenon Environmental)	<i>Recycled Water Finance Perspectives from Two San Diego Agencies</i> James Strayer (PBS&J)	<i>Silence Means Sure Failure - Sincere Outreach Equals Success - Maui County's Successful Outreach Program</i> Eassie Miller (Brown and Caldwell)	<i>Water Reuse in the Automotive Industry - Review of Three Distinct Installations in Mexico</i> Chad Dannemann Orest Zacerkowny (US Filter)

National Legislative Outlook Breakfast

This breakfast session will be moderated by Richard Atwater, Chairman of WateReuse's National Legislative & Regulatory Committee. The session will provide a status report on current relevant and pending water legislation, including the Association's draft bill, the Water Reuse Funding Act of 2003. Featured speakers will include Texas State Representative

Robert Puente, Chair of the Natural Resources Committee, and Eric Sapirstein, WateReuse's Washington lobbyist. Senator Pete Domenici (R-NM) and Bennett Raley, Assistant Secretary for Water and Science in the Department of the Interior, also have been invited to speak.

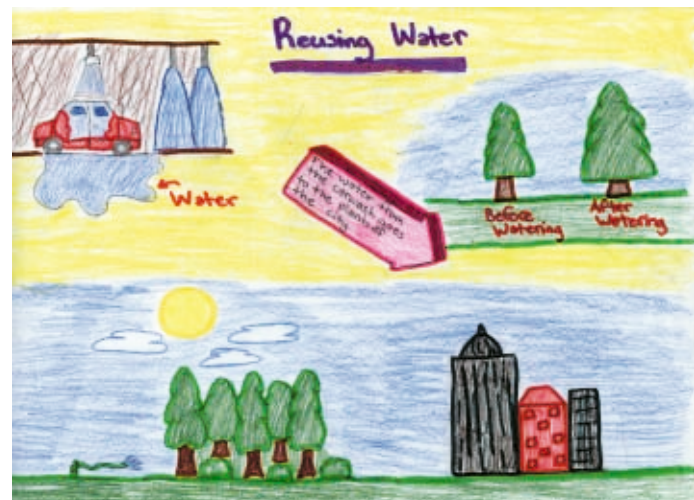
2003 SYMPOSIUM TECHNICAL PROGRAM

Monday September 8, 2003 - Morning Sessions

Time	Session A-1 Urban Reuse Issues Moderator: Bob Reed	Session B-1 Water Quality Issues Moderator: Mike Gritzuk	Session C-1 Innovative Uses of Reclaimed Water Moderator: Eric Rosenblum	Session D-1 Membrane Bioreactors Moderator: Bart Hines
10:00 am - 10:30	<i>West Basin Municipal Water District: 5 Designer (Recycled) Waters to Meet Customer's Needs</i> Darryl Miller (West Basin Municipal Water District)	<i>Assessment of Recycled Water Irrigation in Central Oahu</i> Ronald Crites (Brown and Caldwell)	<i>Balancing Golf Course Demands with Recycled Water Production - A Daily Challenge</i> Gary Grinnell (Las Vegas Valley Water District)	<i>Wastewater Membrane Bioreactors - An Emerging Technology for the Development of a Reclaimed Water Supply</i> Jill Manning Hudkins (Hartman & Associates)
10:30 am - 11:00	<i>Unsaturated Zone Monitoring Design for the Honolulu Board of Water Supply Reclaimed Water Demonstration Study</i> Steve Wilson (Brown and Caldwell)	<i>San Antonio Water System: Edwards Aquifer Recharge Zone Irrigation Pilot Study</i> Ken Diehl (San Antonio Water System)	<i>Drought Relief for Colorado Springs: A Fast-Track Design Build Reuse Project</i> Larry Schimmoller (CH2M HILL)	<i>Optimization of Various MBR Systems for Water Reclamation</i> Samer Adham (MWH)
11:00 am - 11:30	<i>Managing Salt Problems in Landscape Use of Reclaimed Water in the Southwest</i> S. Miyamoto (Texas A&M University Agricultural Research Center)	<i>Challenges of High Salinity in Reclaimed Water</i> Michael Gritzuk (Phoenix Water Services Department)	<i>Desalination and Source Separation for Reuse of a Food Processing Wastewater at an Ornamental Nursery</i> Thomas Potter (Jones Edmunds & Associates)	<i>Merits of Alternative Membrane Bioreactor Systems</i> John Bratby (Brown and Caldwell)
11:30 am - 12:00	<i>Sprinkler Conversion for Minimizing Foliar Salt Damage</i> David Ornelas (El Paso Water Utilities)	<i>Low Cost Analytical Methods for Measuring NDMA Concentrations: Project Overview</i> Cordelia Hwang (Metropolitan Water District of Southern California)	<i>Generating Electricity from Recycled Water</i> Dan Carlson (City of Santa Rosa)	<i>MBRs: Technology/ Procurement Options</i> Cindy Wallis-Lage (Black & Veatch)



*"Recycle! Reuse!" poster
Created by: Julianne
5th grade
Encino Park Elementary*



*"Reusing Water" poster
Created by: Amber
5th grade
Oak Crest Intermediate*

2003 SYMPOSIUM TECHNICAL PROGRAM

Monday September 8, 2003 - Afternoon Sessions

Time	Session A-2 Operational Issues & Disinfection Moderator: Paul Klein	Session B-2 Indirect Potable Reuse Moderator: Gary Morse	Session C-2 Public Education Moderator: Jo Ann Jackson	Session D-2 Environmental Reuse Moderator: Pick Talley
1:30 pm - 2:00	<i>San Antonio Water System's Recycled Water Program Case Study: AWWARF Study</i> Jonathan Vorheis (CH2M HILL)	<i>The Rules of Indirect Potable Reuse</i> John Ruetten (Resource Trends)	<i>What do Customers Really Want?</i> Karen Dotson (Tucson Water)	<i>Brevard County, Florida - South Central Regional Multi-Faceted Reclaimed Water System - Over a Decade of Lessons Learned</i> Craig Ferguson (PBS&J)
2:00 pm - 2:30	<i>Real World Experience of Making Reuse System Work - The City of Phoenix Cave Creek Reclaimed Water System</i> Andy Terrey (City of Phoenix)	<i>Guidelines for Design and Operation of Soil Aquifer Treatment for Removal of Effluent Derived Bulk Organic Matter</i> Tanja Rauch (Colorado School of Mines)	<i>The "Discover a Cleaner Tomorrow" Tour and Educational Program - A Program of Science and Conservation Education for High School Science Students at South Cross Bayou Water Reclamation Facility</i> Jan Tracy (Pinellas County Utilities)	<i>The Ed Pastor Kino Environmental Restoration Project - How the Use of Reclaimed Water and Harvested Stormwater Have Created an Environmental Restoration Benefit</i> Paul Bennett (Pima County Wastewater Management)
2:30 pm - 3:00	<i>SAWS' Recycled Water System Start-up Challenges and Successes</i> Ross Harris (San Antonio Water System)	<i>Site Investigation Methods: Defining Recharge Feasibility at the City of Phoenix North Gateway Water Reclamation Plant</i> Christine Close (Damon S. Williams Associates)	<i>West Basin Municipal Water District: Educating the Public on Indirect Potable Reuse in California</i> Art Aguilar (West Basin Municipal Water District)	<i>Reuse of Treated Waste Water in Private Gardens: An Economical Option for the Center of Mexico</i> Rafael Zarate Araiza (Hidrorenovacion)
3:00 pm - 3:30	Break	Break	Break	Break
3:30 pm - 4:00	<i>Performance Validation of UV Systems: Implications for System Design and Operation</i> Casey LeBlanc (Whitley Burchett & Associates)	<i>Year 2003 Update on a Major Texas Potable Water Supply Reclaimed Water Augmentation Project</i> Alan Plummer (Alan Plummer Associates)	<i>The Road to NEWater</i> Linda Macpherson (CH2M HILL)	<i>The City of Yelm's Award Winning Water Reclamation Project Leads the Way in Washington State</i> Thomas Skillings (Skillings-Connolly)
4:00 pm - 4:30	<i>Membranes and UV: The Present and Future of Recycled Water?</i> Andrew Salvesson (Carollo Engineers)	<i>Assessment of Anthropogenic Influence in Indirect Potable Water Reuse</i> Tanita Sirivedhin (Gas Technology Institute)	<i>Introduction of Recycled Water on Oahu: Tailoring Outreach to Meet Cultural Norms</i> Erwin Kawata (Honolulu Board of Water Supply)	<i>A Case History for Cost Effective Wastewater Treatment, Reuse, and Environmental Restoration</i> C.E. Swindell (Ecotech Consultants)
4:30 pm - 5:00	<i>Can N-nitosodimethylamine Formation be Affected by Polymer Use During Advanced Wastewater Treatment?</i> Larry Neisess (County Sanitation Districts of Los Angeles County)	<i>Utilizing Membrane Surface and Solute Properties to Assess the Rejection Behavior of Organic Trace Pollutants in High-Pressure Membrane Applications</i> Pei Xu (Colorado School of Mines)	<i>Cranberry Highlands - Building the Case of Water Reuse in the Northeast</i> James Willard (Herbert, Rowland & Grubic)	<i>Industrial Reuse Success Story - City Public Service of San Antonio's Pioneering Use in Electric Generation</i> Paul Jensen (PBS&J)

2003 SYMPOSIUM TECHNICAL PROGRAM

Tuesday September 9, 2003

Time	Session A-3 Urban & Water Quality Issues Moderator: Roger Schenk	Session B-3 Health Effects Moderator: Alan Plummer	Session C-3 Storage and Groundwater Issues Moderator: Dale Fisseler	Session D-3 Operations Workshop & Tour Moderator: Pablo Martinez
10:00 am - 10:30	<i>Western Ramapo Water Reuse Project</i> Michael Tamblin (Stearns & Wheler)	<i>Microbial Water Quality Impacts on Reclaimed Water End-Users</i> John Brereton (Narasimhan Consulting Services)	<i>Planning of a Regional Irrigation System Using Seasonal Storage of Irrigation Quality Water in Southwest Florida</i> Mark McNeal (CH2M HILL)	<p>Walking Tour:</p> <p>10:00 am - 10:30</p> <p>San Antonio Water System's (SAWS) Heating and Cooling Facility. Mr. Mark Villarreal of SAWS will conduct a walking tour of a recycled water heating and cooling system under development that will serve downtown hotels.</p> <p>10:30 - 11:00</p> <p>The Alamo's Landscape Irrigation System. A narrated walking tour of the Alamo's recycled water irrigation systems will be conducted by Mr. Mark Nauschutz of the Alamo.</p> <p>11:00 - 11:30</p> <p>River Walk. Mr. Pablo Martinez of SAWS will conduct a walking tour of the historic Riverwalk and the use of recycled water to supplement the river's flow maintaining this vital tourist attraction.</p> <p>Bus Tour</p> <p>1:00 - 3:30 pm</p> <p>Ross Harris and Ken Diehl will lead a bus tour of the following sites:</p> <ul style="list-style-type: none"> • Tuletta discharge at the San Antonio River in Brackenridge Park • Dos Rios Water Recycling Center • Turf Study Site at the Leon Creek Water Recycling Center
10:30 am - 11:00	<i>Improving Design Decisions through Incorporation of Real-Time Data</i> Jeffrey Sellberg (Camp Dresser & McKee)	<i>Evaluation of Microbial Risk Assessment Techniques for Reclaimed Water Applications</i> Jeff Soller (EOA)	<i>Hydrologic Characterization of a Karst Basin for Artificial Recharge of Treated Wastewater near State College, Pennsylvania</i> David Yoxtheimer (USFilter Groundwater Services)	
11:00 am - 11:30	<i>The Effect of Storage Time Following Immunomagnetic Separation on the Sensitivity and Specificity of the FDN-MPN Cell Culture</i> Angela Gennaccaro (University of South Florida)	<i>Efficacy of Pathogen Removal at Full-Scale, Operational Water Reuse Facilities in Monterey, California</i> Bahman Sheikh (Water Reuse Consulting)	<i>Agua Fria Linear Recharge Project - Phase 1, Phoenix, Arizona</i> Aimee Conroy (Phoenix Water Services Department)	
11:30 am - 12:00	<i>Potential for Graywater Use in the San Antonio, Texas Area</i> Brian Lillibridge (San Antonio Water System)	<i>Protozoan Pathogens in Reclaimed Water - What is the Risk?</i> Theresa Slifko (Orange County Utilities)	<i>Increased Reuse Supply Through Aquifer Storage and Recovery Management</i> James Dwyer (CH2M HILL)	
Time	Session A-4 Regulatory Considerations Moderator: Greg Weiland	Session B-4 Agricultural Reuse Moderator: Keith Israel	Session C-4 Users Forum Moderator: Bruce A. Lazenby	
1:30 pm - 2:00	<i>Review of Regulations and Guidelines for Water Reuse across the United States</i> Valerie Going (Camp Dresser & McKee)	<i>Recycling Water in Israel and in San Antonio</i> Calvin Finch (San Antonio Water System)	<i>Water/Energy Re-use in Food Processing Applications</i> Dennis Martin (Chem Treat)	
2:00 pm - 2:30	<i>TPDES Permit of Tomorrow: Integrated Permitting of San Antonio's Water Recycling Centers</i> Gregg Eckhardt (San Antonio Water System)	<i>Water Reuse Pilot Study in Egypt: A USAID Regional Collaborative Initiative</i> Ahmed El-Araby (Egyptian Center of Organic Agriculture)	Panel Discussion and Brainstorming on Issues Faced by Users of Reclaimed Water	
2:30 pm - 3:00	<i>Will Nutrient TMDLs Limit Recycling? A Cautionary Tale from the Malibu Creek Watershed</i> Randal Orton (Las Virgenes Municipal Water District)	<i>Water Reuse for Irrigation in Austria</i> Peter Cepuder (Institute of Hydraulics and Rural Water Management)		
3:15 pm - 4:45	<p>To Drink or Not to Drink IV Moderator: James Crook</p> <p>A lively interactive discussion between a panel of experts and the audience to debate the appropriateness and merits of planned indirect potable reuse.</p>			

Golf at The Quarry Golf Club

Arrangements have been made with The Quarry Golf Club to offer discounted rates to Symposium attendees.

The Quarry Golf Club was one of the first proponents for San Antonio Water System's recycled water program because they saw the benefits of utilizing an alternate water source for golf course irrigation.

The Quarry Golf Club is centrally located in San Antonio between downtown and the San Antonio airport.

The golf course is situated within the old Alamo Cement quarry and is one of several developments to reuse valuable urban space for the benefit of the community.

Please stop by the registration table to obtain information about the Quarry Golf Club and discount passes.

WaterReuse Association

The WaterReuse Association is a national organization whose mission is to increase the amount of high-quality water available to communities and the environment by promoting reclamation, recycling, and reuse. One of the Association's primary goals is to assist our members in implementing water reuse projects that yield valuable benefits for their communities. We accomplish this overarching goal by:

- encouraging more Federal involvement in water reuse efforts, including the provision of funding for local projects;
- sponsoring research that demonstrates to the public that reclaimed water is a safe and reliable water resource; and
- engaging in outreach services to provide information to the public about the safety and benefits of recycled water.

The Association has grown rapidly since it became a national organization three years ago. WaterReuse now has more than 275 members in the U.S. and abroad, including more than 125 local water and wastewater agencies. One of the reasons the Association has been effective is due to its diverse membership which, in addition to local agencies, includes state and Federal government agencies, consultants, equipment suppliers, and prominent researchers from the academic community.



*"Recycling is Fun" poster
Created by: Nicole
4th grade, Somerset Veterans Elementary*



Fees for the golf outing are \$60 Mon-Fri. and \$70 on Sat-Sun. \$10 off coupons are available for all players interested in playing during the Conference week. Fees includes cart rental.

To Drink or Not to Drink IV

For the fourth consecutive year, WaterReuse will convene a panel of experts to debate the appropriateness and merits of planned indirect potable reuse. The session, moderated by Board member Jim Crook, will feature a lively interactive discussion between panelists and the audience. Featured panelists will be David York (Florida DEP) Dale Fisseler (Fort Worth Water Department), Frank Rogalla (Black & Veatch), David Ammerman (CDM), and Tom Richardson (Raines, Melton, & Carella), Chairman of WaterReuse's Potable Reuse Committee.



The Riverwalk

Symposium Badges

Badges are required for admission to all meetings, technical sessions, and social functions. After checking in at the hotel, please stop by the WateReuse Registration Desk to pick up your badge and other Symposium materials.



Sunset Station

How to Register

Complete the registration form and mail it with payment (or fax if paying by credit card) to:

WateReuse Association
635 Slaters Lane, 3rd Floor
Alexandria, VA 22314

Phone (703) 684-2409
Fax (703) 548-3075

Registration, Cancellation and Refund Policy

Registrations received after August 15, 2003 will be subject to space availability and an increase in registration fees. Cancellations must be submitted in writing to the WateReuse Association on or before August 29, 2003 to receive a full refund, less a \$25 processing fee. Refunds will not be given for cancellations made after August 29, 2003. All registration fees must be paid prior to the Symposium.

Hotel Accommodations

The Symposium will be held at the Marriot Rivercenter located at 101 Bowie Street, San Antonio, Texas. Sleeping rooms are available at the rate of \$149 per night, plus tax. Please make your reservations by calling 800-648-4462 and refer to the "WateReuse Group". All reservations must be accompanied by a first night room deposit, or guaranteed with a major credit card. The deadline for hotel reservations is August 15, 2003. Hotel reservations made after August 15, 2003 will be based on a space and rate-available basis. The deposit is refundable with 48-hours advance cancellation notice.

Transportation Information

CAR RENTAL: Avis Rent-A-Car, Inc. is the official car rental supplier for the WateReuse 2003 Annual Symposium. Avis is offering discounted group rates and is conveniently located at the San Antonio International Airport. To reserve your car, please call Avis at **800-331-1600**. The special Avis Worldwide Discount Number is : **J991775**.

AIRLINE DISCOUNT: Continental Airlines is the official airline for the WateReuse 2003 Annual Symposium. Please call **800-468-7022** between the hours of 7:00 am and 11:00 pm EST to make your CONTINENTAL reservation and refer to code: **V8N959**.

Symposium Sponsorship Opportunities

Special sponsorship opportunities are available for the 2003 Annual Symposium. Information is available on our web site (www.WateReuse.org) or contact **Wade Miller** at the WateReuse Association office: (703) 684-2409 or by e-mail: wmiller@WateReuse.org

Exhibitor Opportunities

This year's Symposium will include the opportunity for industry vendors and suppliers to participate as exhibitors. Numerous activities will take place in the exhibit hall and exhibit hours have been structured to give attendees maximum opportunity to interact with your representatives. More than 350 people are expected to attend this year's Symposium. Attendees will consist primarily of senior managers from water and wastewater utilities and executives and managers of the nation's leading engineering firms.

Information is available on our web site (www.watereuse.org) describing the ways your organization can participate. Should you have any questions or would like further information, please contact **Wade Miller** at the **WateReuse Association office: (703) 684-2409** or by e-mail: wmiller@WateReuse.org or contact **Jeffrey Arnold** at **815-639-4472** or by e-mail: jarnold@aqua-aerobic.com

Don't miss out - Reserve your exhibit space now!

2003 SYMPOSIUM REGISTRATION FORM

Name _____ Badge Name _____

Organization _____ Title _____

Address _____ City _____ State _____ Zip _____

Phone _____ Fax _____ E-mail _____

TOTAL ENCLOSED \$ _____ Please bill to my credit card VISA M/C AmEx

Name as it appears on card _____

Card# _____ Exp. Date _____

I authorize this charge to my credit card. I understand the cancellation policy within this form.

Customer Signature _____

Symposium Registration Fee includes admission to all technical sessions, lunch and receptions as noted, and one copy of the Annual Symposium Proceedings on CD-ROM.

THIS SECTION MUST BE COMPLETED

I will attend the following functions, which are included in the registration fee:

Exhibitor's Welcome Reception	Sunday, September 7th	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Continental Breakfast	Monday, September 8th	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Opening Session	Monday, September 8th	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Luncheon - Awards Presentation	Monday, September 8th	<input type="checkbox"/> Yes	<input type="checkbox"/> No
President's Reception	Monday, September 8th	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Legislative Outlook Breakfast	Tuesday, September 9th	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Special Meal Requests		<input type="checkbox"/> Vegetarian	<input type="checkbox"/> Lowfat

SYMPOSIUM FEES

Please indicate which items you are registering for:

Advance Symposium Registration (By 8/15/03)

<input type="checkbox"/> WaterReuse Members	\$425
<input type="checkbox"/> Non-Members	\$500
<input type="checkbox"/> Student Registration *	\$75
<input type="checkbox"/> One Day Rate - Sunday	\$150
<input type="checkbox"/> One Day Rate - Monday	\$200
<input type="checkbox"/> One Day Rate - Tuesday	\$200

Optional Items, Activities, Guests & Extras

<input type="checkbox"/> Guest at Monday Awards Luncheon	\$35
<input type="checkbox"/> Operators Tour of the San Antonio Recycling Facilities Tuesday <i>(Included in Full Registration)</i>	
<input type="checkbox"/> Operators Tour ONLY	\$75

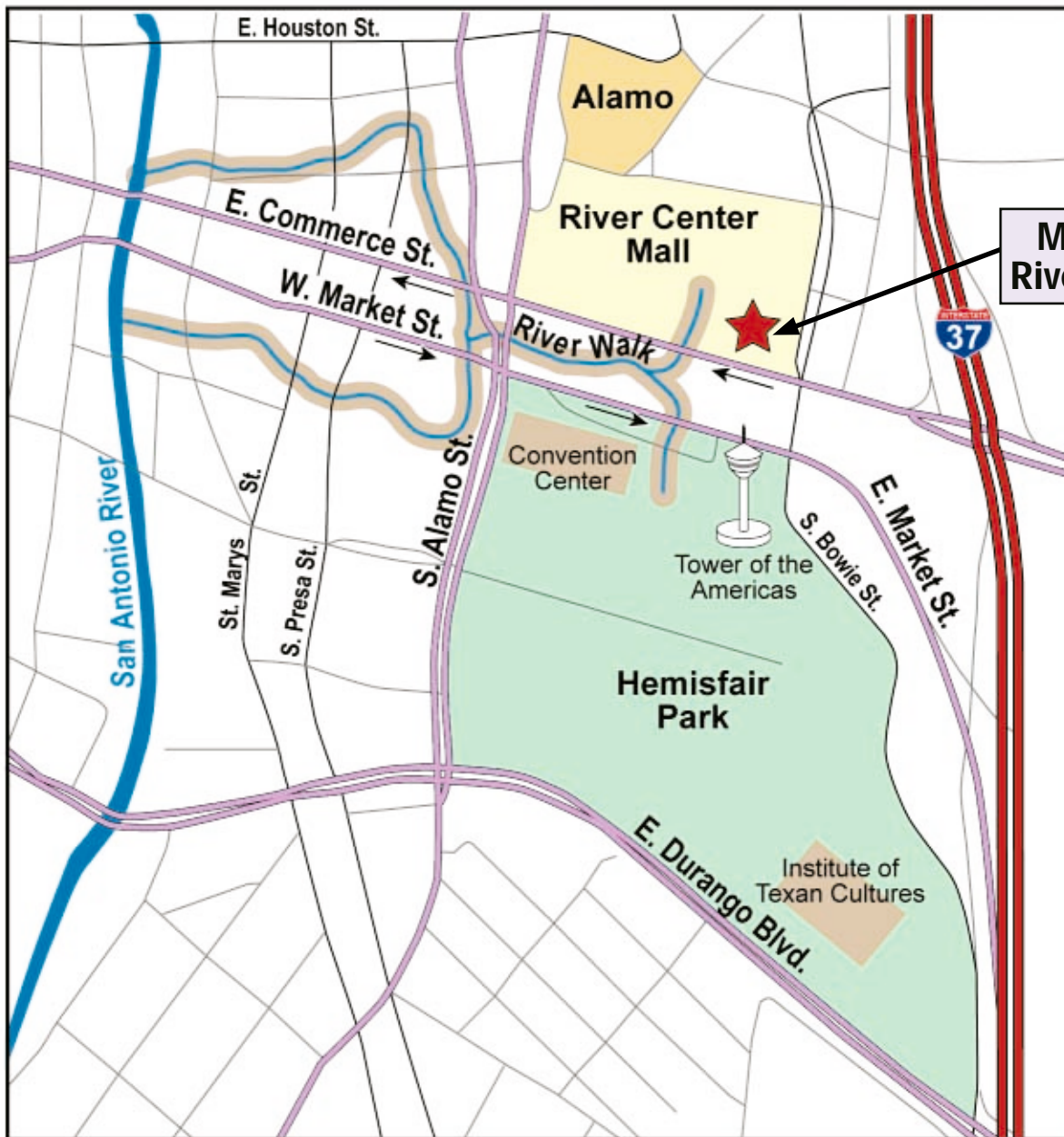
Late Symposium Registration (After 8/15/03)

<input type="checkbox"/> WaterReuse Members	\$475
<input type="checkbox"/> Non-Members	\$550
<input type="checkbox"/> Student Registration *	\$100
<input type="checkbox"/> One Day Rate - Sunday	\$200
<input type="checkbox"/> One Day Rate - Monday	\$250
<input type="checkbox"/> One Day Rate - Tuesday	\$250

** Student registration requires a valid student I.D. and includes sessions only (no meals or proceedings).*

Mail completed registration with payment to:
WaterReuse Association, Attn: Amy Kirson
635 Slaters Lane, 3rd Floor
Alexandria, VA 22314

Or fax if paying by credit card to:
(703) 548-3075



Marriott
Rivercenter



635 Slaters Lane, 3rd Floor
Alexandria, VA 22314
Phone (703) 684-2409
Fax (703) 548-3075
www.watereuse.org

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