

2016

Southwest On-Site Wastewater Conference

February 3-4, 2016

Laughlin, Nevada U.S.A.





P.O. Box 359
Belgrade, MT 59714
888-406-2289/406-581-1613

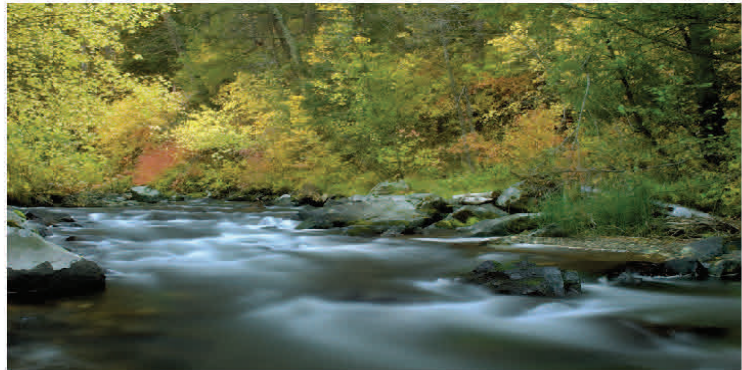
Advanced Onsite Wastewater Treatment Systems for Places We Need to Protect



Eliminite Advanced Wastewater Treatment Systems exemplify smart engineering and design, simple installation and maintenance, and reliable long-term treatment performance for commercial, community, agricultural, residential and mixed-use applications where advanced levels of BOD/TSS removal is required and especially where stringent Total Nitrogen standards must be met. Eliminite is a practical advanced treatment option for projects located in more remote/mountainous areas due to its low-maintenance design and ability to function under extreme conditions.

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Arizona County Directors of Environmental Health Services Association

Andrew Linton, President
c/o County Supervisors Association
1905 W Washington St, Suite 100
Phoenix, AZ 85009

Welcome to the 2016 Southwest Onsite Wastewater Conference! This 10th biennial presentation of the conference brings you the latest in onsite wastewater research, technology and practice. We started two decades ago as a means for Arizona county environmental health programs to provide training for their onsite wastewater employees. With each conference, the organizing committee looks at the current breadth of practice in onsite wastewater management to provide you with knowledge of advances and practices in the field.

Our conference theme, *Onsite System Sustainability*, summarizes many of the topics that fill our program agenda. Reuse of onsite wastewater, sustainability assessment of onsite system options, and emerging issues of treating for superbugs in wastewater effluent are new concepts for many of us. However, the agenda also includes presentations on issues that are more common today: Onsite solutions for high-strength wastewater, problem-solving techniques for onsite wastewater professionals, and designing larger onsite subsurface drip systems.

We are honored to have a distinguished faculty of practitioners. They come from academia, industry and government. All have volunteered to provide you with the benefit of their experience. They are anxious to hear your questions as part of their presentations and to visit with you during breaks and at the Wednesday evening mixer.

Our exhibitors bring information on the latest equipment and services of interest to you. Please visit them all and take advantage of their expertise by discussing your activities with them. The support from our exhibitors helps us keep the cost of this conference low. We thank them for their support.

Now it's up to you. We urge you to take full advantage of the vast array of expertise and experience possessed by the conference participants, speakers and vendors. Meet everyone! Make new friends and business contacts, and enjoy the camaraderie.

Thank you for attending.

A handwritten signature in black ink, appearing to read 'Andy Linton', written in a cursive style.

Andy Linton
ACDEHSA President

A handwritten signature in black ink, appearing to read 'Kevin Chadwick', written in a cursive style.

Kevin Chadwick
Conference Chairman

2016 Southwest Onsite Wastewater Conference

Exhibitor Location Map

CONFERENCE SPONSORS

GOLD LEVEL

SALCOR
James & Sally Cruver
P.O. Box 1090
Fallbrook, CA 92088-1090
760-731-0745
Fax 760-731-2405
Jscruver@aol.com **Booth 8**

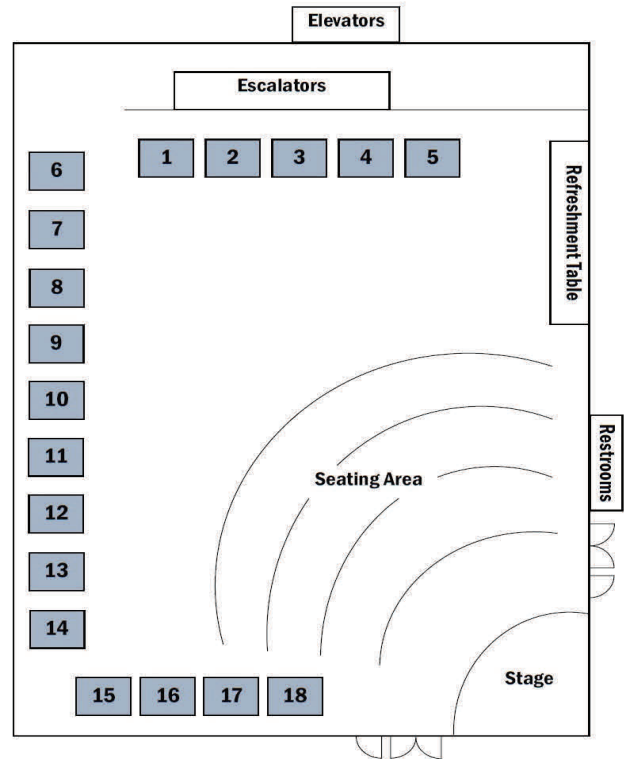
Eliminite, Inc.
Thomas Kallenbach
P.O. Box 359
Belgrade, MT 59714
406-581-1613
888-406-2289
Tjk@eliminite.com
**See Eliminite at
Jensen Precast, Booth 3**

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Julie Cote
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Whitefield Rd.
I-800-473-5298
www.presbyeco.com **Booth 5**

BRONZE LEVEL

Roth Global Plastics
David Holmes
P.O. Box 245
Syracuse, NY 13211
530-864-0438
www.rothmultitank.com
Booth 14



EXHIBITORS

ANUA
Colin Bishop, REHS, RS
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409-466-4644
www.anuainternational.com **Booth 7**

Elmco
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Jensen Precast
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909-429-4139
Tleffler@jensenprecast.com **Booth 3**

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913-422-0707
www.biomicrobics.com **Booth 1**

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Jet Inc.
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800-321-6960
www.jetincorp.com **Booth 11**

Ecojohn
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714-568-1077
www.ecojohn.com **Booth 16**

Geoflow
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Corte Madera, CA 94925
415-927-6000
www.geoflow.com **Booth 12**

Orenco Systems
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Sutherlin, OR 97479
541-459-4449 ext 431
www.orenco.com **Booth 15**

Eljen Corporation
James Donlin
125 McKee St.
East Hartford, CT 06108
860-610-0426
www.eljen.com **Booth 10**

Infiltrator Water Tech.
Eric Burquist
4 Business Park Rd.
Old Saybrook, CT 06475
860-577-7030
www.infiltratorwater.com **Booth 9**

2016 Southwest Onsite Wastewater Conference

Pre-Conference Sessions

Monday and Tuesday, February 1-2, 2016

NAWT Inspection Training and Certification

8:00 AM - 5:00 PM

Kitt Farrell-Poe, University of Arizona / David Gustafson, Woodland Engineering

Whether you are an experienced industry professional or just starting out in the business, you will find a great deal of value in the National Association of Wastewater Transporters, Inc. (NAWT) Inspection Training & Certification course. Your successful completion of the training will allow you to be recognized as a national certified inspector by NAWT you will be listed on a national registry of certified industry professionals for two years, and is part of the eligibility to becoming an inspector the Arizona Transfer of Property Inspection program. Certified Inspectors must complete a comprehensive onsite sewage treatment systems course covering terminology, treatment, tanks, construction methods, and application and pass a rigorous exam to receive national certification. There are only a selected number of professionals throughout the United States and Canada who have successfully completed both courses.

For future class information and to register, contact Bernadette Capossela, Administrative Associate / University of Arizona / Ag & Biosystems Engineering / 520-621-3691 / bcaposse@email.arizona.edu

Tuesday, February 2, 2016

Best Practices for Precast Concrete Tank Inspections Construction Track Bridgeview Room 3:00 PM

Claude Goguen, PE, LEED AP, National Precast Concrete Association

Anua Grease Guardian Product Overview Construction Track Bridgeview Room 5:00 PM

Colin Bishop REHS, RS, President, Environmental North America, Anua

UV Disinfection for Onsite Wastewater Discharge Design Track Mirror Room 1:00 PM

Jim Cruver, Ph.D., President, Salcor

Presby System Innovative O&M Solutions Design Track Mirror Room 3:00 PM

Jerry Lewinson, Environmental Quality Control

Orenco Design Aid for High Strength Waste Design Track Mirror Room 5:00 PM

Jeff Pringle, Account Manager, Western US Region, Orenco Systems, Inc.

Moderator: Jake Garrett / 928-474-7177 / jgarret@co.gila.az.us

Exhibitor Set-up

Tuesday, February 2, 2016

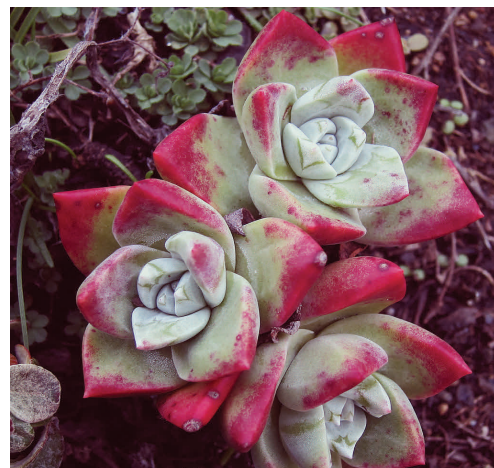
4:00 PM - 8:00 PM

Registration

Tuesday, February 2, 2016

Conference Registration Desk Open

6:00 PM - 8:00 PM



2016 Southwest Onsite Wastewater Conference

Conference Sessions

Wednesday, February 3, 2016

Registration

7:00 AM - 8:00 AM

Morning Moderator: Andy Linton, Maricopa County

President's Welcome

8:00 AM - 8:10 AM

Andy Linton, ACDEHSA President

Solving for Pattern: Integrated Sustainability Assessment of Alternative Centralized and Decentralized Water Service Options

8:10 AM - 9:00 AM

Jay Garland, EPA Office of Research and Development National Exposure Research Laboratory, U. S. Environmental Protection Agency, Cincinnati, Ohio

The adoption of alternative paradigms for providing water and wastewater services such as fit-for-purpose water and resource recovery could allow for more sustainable alternatives to water management in the future. This talk will describe the development of tools and metrics to aid system-level water services decisions using the case study of Falmouth, MA, a Cape Cod community working to develop a wastewater plan to counteract eutrophication of coastal areas due to nutrient release from aging and damaged septic systems. Alternatives to septic systems were identified, and several metrics were applied to the different systems (Life Cycle Assessment, Life Cycle Cost, human health risk assessment, resilience). Very few studies include metrics that span health, environment, economic, and technological aspects of water service options, and even fewer have considered variability and uncertainty when comparing metrics. We found tradeoffs between the human health impact and the cost/energy consumption metrics that were not initially apparent in the individual metric assessments. This work indicates the need for, and continued refinement of, integrated assessment to better define clear sustainable paths for providing water services.

Online Tool for Creation of Customized Septic System Owner's Guides

9:00 AM - 9:50 AM

Sara Heger, Ph.D., Engineer and Instructor, University of Minnesota

With over 25% of the US population being served by septic systems and that percentage on the rise, the need for proper management is a key issue to accelerate adoption of current technologies and improve existing onsite wastewater treatment systems. This project provides an online vehicle for wastewater professionals to transform rural wastewater management by developing a customizable Community System Owner's Guide (CSOG). H2OandM.com is an online tool to create customized homeowner operation and maintenance (O&M) manuals for onsite septic systems from a single family home to a large cluster system. The tool will work for newly design/installed systems or those that have been in the ground a long time. A septic system professional creates an account where all their projects are stored. Using the web interface they enter specific site and system information and the tool creates an electronic or hard copy O&M manual which includes stock image and text along with the customized information entered by the professional.

Conference Session Break

9:50 AM - 10:20 AM

Visit exhibits

2016 Southwest Onsite Wastewater Conference

Conference Sessions

Wednesday, February 3, 2016

Precast Concrete Tanks – How Sustainable Are They?

10:20 AM - 11:10 AM

Claude Goguen, PE, LEED AP, National Precast Concrete Association

Green building can no longer be classified as a fad. It is an industry that is growing by leaps and bounds every year. College students are already learning about building more with less and focusing on how to preserve natural resources. Decentralized wastewater treatment is truly a remarkable sustainable system. The energy savings from avoiding moving waste through miles of pipelines and treating it at a waste facility cannot be ignored. Sustainability of the system can be further enhanced by using products that are sourced and manufactured responsibly. And most importantly, the components have to be durable in the presence of aggressive environments. During this session, we will discuss the sustainable attributes of precast concrete tanks, and what manufacturers are doing to make a more durable structure with fewer impacts on our precious resources.

Because of Recent Discoveries of MRSA and Multidrug Resistant Genes in Chlorinated Wastewater Treatment Plant Effluents, Should Disinfection Standards be Modified?

11:10 AM - 12:00 PM

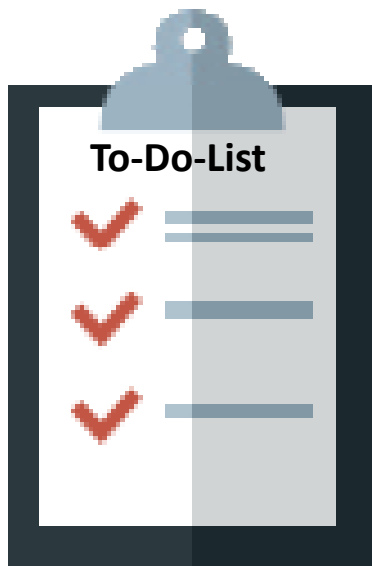
Jim Cruver, Ph.D., President, Salcor Inc.

In the US, over 2 million people are sickened (23,000 dying) each year from MRSA and other superbugs, according to the CDC. Worldwide, the numbers are much larger. A number of studies conducted by U of Minnesota, VA Tech University, and Rice University, have shown that these microorganisms are resistant to normal levels of chlorination, as is the multidrug resistant gene NDM-1. This gene is able to transfer antibiotic resistance to E. coli, Salmonella, and other bacteria. Possible solutions to this problem include higher chlorine doses, or other methods, such as Ozone or UV light. This presentation will compare alternatives, and show preliminary data. Modification of the fecal coliform and E. coli standards may be necessary to achieve proper monitoring of these microorganisms.

Lunch Break

12:00 PM - 1:10 PM

Lunch and visit exhibits



2016 Southwest Onsite Wastewater Conference

Conference Sessions

Wednesday, February 3, 2016

Afternoon Moderator: Jake Garrett, Gila County

How Colorado Applies Regulation Flexibility on Tough Lots

1:10 PM - 2:00 PM

Bob Wright, PE, Alles Taylor & Duke, LLC, Evans, Colorado

The 2013-2014 Colorado state and county regulation changes significantly modified the previous regulations, but did not advance the innovation or flexibility of the regulations much at the state level. Most flexibility in Colorado comes at the county health jurisdiction level. The presentation will include foundational aspects of the regulatory process, and demonstrate how regulatory flexibility translates to practice for design, installation and operational compliance. Examples of flexibility for difficult sites in Colorado will be discussed.

Gray Water and Wastewater Reuse

2:00 PM - 2:50 PM

Robert Rubin, Ph.D., Professor Emeritus, North Carolina State University

Water is increasingly viewed as a scarce resource that must be managed aggressively. Water resources must be considered fit for use and fit for purpose; but all water need not be treated to potable use standards to be fit for purpose end uses. A variety of water resources should be considered as alternate sources of water. These include wastewater, gray water, storm water, harvested rainwater, cooling tower water discharge and drainage water from building foundations. Each of these alternative source may be developed to meet non-potable use applications in residential, commercial, or industrial applications. This paper will summarize some of the water quality concerns and management issues associated with developing alternative sources of water for local use.

Conference Session Break

2:50 PM - 3:20 PM

Visit exhibits and enjoy refreshments courtesy of our Silver Sponsor, Presby Environmental

Reuse Standards in California; An Onsite Perspective

3:20 PM - 4:10 PM

Nick Weigel PE, LEED AP BD+C, Senior Engineer, NorthStar Engineering, Chico, California

The drought in California has brought national attention to water issues in the state. A practicing consulting engineer will speak on current reuse standards in California and the application of these standards for onsite wastewater facilities. Are policy and rule changes under consideration due to the drought conditions?

Mixer Reminder

Please plan to stay for the mixer at 5 pm in the meeting room.

Visit with exhibitors, speakers and colleagues, and enjoy complimentary snacks with a cash bar.

2016 Southwest Onsite Wastewater Conference

Conference Sessions

Wednesday, February 3, 2016

Pathogen Treatment Guidance and Monitoring Approaches for On-Site Non-Potable Water Reuse

4:10 PM - 5:00 PM

Jay Garland, EPA Office of Research and Development, National Exposure Research Laboratory, U. S. Environmental Protection Agency, Cincinnati, Ohio

As the reuse of alternative water sources continues to gain popularity, public utilities and other stakeholders are seeking guidance on pathogen treatment requirements and monitoring approaches for nonpotable use of onsite collected waters. Given that alternative water sources (e.g. graywater, stormwater, and roof runoff) experience lower pathogen loadings than municipal wastewater and that nonpotable uses (e.g. toilet flushing and irrigation) minimize direct contact with the water, it is likely that lower treatment requirements may be necessary to protect public health. However, science-based pathogen reduction targets for nonpotable reuse are currently lacking, forcing system operators and regulatory agencies to use conservatively high-level treatment for all water sources and reuse applications. In addition, specific requirements for onsite collected waters, which experience greater variability in pathogen density than municipal wastewater due to scaling and dilution effects, have not been considered. This talk will present risk-based pathogen log-reduction requirements for various types of onsite collected wastewaters used for a range of nonpotable uses. In addition, approaches for monitoring treatment performance for pathogen removal will be discussed, emphasizing the limitation of traditional fecal indicators and the potential use of more commonly occurring and abundant microorganisms as process indicators.

Exhibits and Mixer

5:00 PM - 6:30 PM

Enjoy snacks while you visit with exhibitors, speakers and colleagues

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2016 Southwest Onsite Wastewater Conference

Conference Sessions

Thursday, February 4, 2016

Morning Moderator: Kevin Chadwick, Maricopa County

Case Studies of High Strength Wastewater

8:00 AM - 8:50 AM

Sara Heger, Ph.D., Engineer and Instructor, University of Minnesota

Onsite systems used for non-residential high strength waste (HSW) applications which can encounter significantly different usage patterns, waste strength and waste stream characteristics. An overview of key design parameters will be discussed as well as potential design solutions. Then the presentation will discuss two recent research project as case studies of HSW. Adult foster homes provide assisted-living services—including nursing and 24/7 care—for individuals requiring special medical and behavioral needs. Wastewater from these homes and the corresponding effects on conventional onsite sewage treatment systems, likely differs from average residential sources but is not fully understood. This presentation summarizes the project findings and recommends septic system management practices that may help prevent future problems. In addition, 52 existing septic systems on rest stops were evaluated across Minnesota. The goal of the assessments was to evaluate risk. The full assessment included a preliminary review of the site, a facility assessment, effluent sampling, septic tank inspections, evaluation of advanced treatment units when present and an inspection of the soil treatment system. The information from the assessment was used to develop a risk matrix. This risk matrix and the results will be presented along with recommendations for future design and management. This risk analysis process could work well for other state and local jurisdictions looking to evaluate systems with a systematic approach.

Designing Larger On-Site Subsurface Drip Reuse and Dispersal projects

8:50 AM - 9:40 AM

Rodney Ruskin, CEO, Geoflow

This session covers the information required to design a large SDI system. 1. Map Making; 2. Soil – Parent material, Relief, Time. Organisms, Color, Texture, Depth, Profile and Restrictive Horizons; 3. Site Evaluation – Grade, Soil Drainage, Landscape Position and Flooding; 3. Design Process – Treatment Systems, Dispersal Systems, System Efficiency and Storage; 4. Component Selection – Treatment, Controller, Filter, Pump, Valves and Dripline; 5. Designing; 6. Reuse for Irrigation; 7. Design factors for Maintenance

Conference Session Break

9:40 AM - 10:10 AM

Visit exhibits

Effluent Sewer Systems Can Affordably Service Communities of All Sizes

10:10 AM - 11:00 AM

Grant Denn, Senior Manager for Engineered Projects, Orenco Systems, Inc.

For decades, effluent sewers have had a difficult time competing against other collection technologies for projects because there was not enough data on the real costs to install and operate effluent sewer systems. There is now long-term data that demonstrates that effluent sewer collection systems can affordably serve communities of all sizes. This presentation will compare capital cost information compiled from over 50 publicly funded bids for effluent sewer, grinder sewer, and gravity sewer, as well as look at operational costs for these technologies.

2016 Southwest Onsite Wastewater Conference

Conference Sessions

Thursday, February 4, 2016

Where is the Box? (and How Do I Think Outside It?)

11:00 AM - 11:50 AM

Bob Wright, PE, Alles Taylor & Duke, LLC, Evans, Colorado

This is a discussion of the mental tools/skills practitioners need to troubleshoot/problem solve OWTS projects. What is the box and how do we identify it? What skills do we need to be good troubleshooters? What tools do we use when troubleshooting? What pitfalls do we encounter and how can we circumvent them using our knowledge and experience. Examples will demonstrate the use of these processes in troubleshooting and problem solving in design, installation, O&M and repairs.

Lunch Break

11:50 AM - 1:00 PM

Lunch and visit exhibits

Afternoon Moderator: Joelle Wirth, Coconino County

Developing Sustainability Criteria

1:00 PM - 1:50 PM

Robert Rubin, Ph.D., Professor Emeritus, North Carolina State University

As resources become more scarce and management needs expand to address resource recovery efforts, sustainability issues emerge as critical elements for local programs. Local management efforts must address a variety of issues including:

1. defining the resource and describing opportunities for beneficial use,
2. developing local management efforts to assure the resource is managed in accordance with sound practices
3. developing programs - both public and private - to assure the resource recovery effort becomes incorporated into local infrastructure

This paper will address some of the critical management issues associated with resource recovery from societal by-products: wastewater, wastewater residuals, gray water, solid waste and other potential sources.

Conference Session Break

1:50 PM - 2:20 PM

Visit exhibits

A Risk-Based Approach to Onsite Regulations

2:20 PM - 3:10 PM

Colin Bishop, REHS, RS, President, Environmental North America, Anua

Treated effluent testing standards have been utilized for many years, including NSF/ANSI Standard 40, ETV, BNQ, and CEN. Furthermore, some regulatory authorities are requiring product field verification. While economic globalization has facilitated technology distribution throughout the world, broad acceptance of different third party standards is lacking. This regulatory rigidity may result in the stifling of innovation and impedance of trade. This session will compare standards and discuss product approval challenges before proposing a regulatory framework for product/technology acceptance that is risk-based, yet provides flexibility and accountability.

2016 Southwest Onsite Wastewater Conference

Conference Sessions

Thursday, February 4, 2016

High Strength Winery/Brewery Waste: Design Approach for Onsite Treatment

3:10 PM - 4:00 PM

Jeff Pringle, Account Manager, Western US Region, Orenco Systems, Inc.

We've learned plenty about the winemaking process since installing our first winery system in California in 2002, with nearly 100 systems now installed throughout the world. Because of its high strength and surge flows, winery process wastewater requires ample primary tankage followed by a robust secondary treatment system. The presentation describes how a multiple-pass, packed bed aerobic onsite system is adapted to treat large volumes of winery waste in a small space. Micro-breweries are now opening in rural communities. Options for brewery waste will also be discussed.

Conference Ends

4:00 PM

Pick up continuing education certificates

Presentations will be posted on our web site in a few weeks at www.southwestconference.com

THE ARIZONA COUNTY DIRECTORS OF ENVIRONMENTAL HEALTH SERVICES ASSOCIATION (ACDEHSA)

Thank you for attending the 2016 Southwest Onsite Wastewater Conference.

Special thanks goes to all of our speakers and exhibitors, whose participation helped make this year's conference a success.

Please mark your calendar:

2017 Southwest Environmental Health Conference, February 1 & 2

2018 Southwest Onsite Wastewater Conference, Jan. 31 and Feb. 1

For upcoming events, visit us at:
www.southwestconference.com



2016 Southwest Onsite Wastewater Conference

Speaker Biographies

Jay L. Garland, Ph.D.

Dr. Jay L. Garland joined the EPA in 2011 as a Division Director within the Office of Research and Development. Dr. Garland received a Ph.D. in Environment Science from the University of Virginia and spent over 20 years working on NASA's efforts to develop closed, bio-regenerative life support systems for extended human spaceflight. NASA recognized him for creative technology innovation on 4 separate occasions. He has authored over 100 scientific papers on a range of topics, including methods for microbial community analysis, factors affecting survival of human associated pathogens, and various biological approaches for recycling wastes. He has completed visiting fellowships and professorships at the Institute for Environment Sciences in Japan, the University of Innsbruck in Austria, and the University of Buenos Aires in Argentina. His work is committed to the development of sustainable systems using sound ecological principles and innovative technology.

Sara Heger, Ph.D.

Dr. Sara Heger is an engineer, researcher and instructor in the Onsite Sewage Treatment Program in the Water Resources Center at the University of Minnesota. Since 1999, she has been providing education and technical assistance to homeowners, small communities, onsite professionals and local units of government regarding onsite wastewater treatment. Sara coordinates the research program at the UMN and is currently, serving as the principle investigator on grants to create online owner's guides and evaluate rest stops served by septic systems. She presents at many local and national training events regarding the design, installation and management of septic systems and related research. Sara is Education Chair of the Minnesota Onsite Wastewater Association (MOWA) and the National Onsite Wastewater Recycling Association (NOWRA). Sara serves on the NSF International Committee on Wastewater Treatment Systems. She is also the chair of the Minnesota State Advisory Committee on Decentralized Systems. She has BS in Biosystems & Agricultural Engineering and a PhD in Water Resource Science.

Claude Goguen, PE

Claude is Director of Sustainability & Technical Education with the National Precast Concrete Association. In this role, Claude provides technical support to NPCA members and the specifying community by developing technical documentation, serving on codes and standards committees, working as the staff liaison to various product and board appointed committees and contributing to NPCA publications. He also represents the association by attending and/or presenting at various trade shows and conventions. In addition to overseeing the NPCA sustainability program, Claude also develops and teaches various NPCA education courses. Claude has been Director of Technical Services at NPCA since 2008 and has 20 years of experience in the precast concrete and construction industry. Prior to working at NPCA, he was an operations manager at a precast concrete manufacturing plant for 10 years. Claude is a licensed P.E. in Indiana and a licensed P.Eng in Canada, and is a LEED Accredited Professional. He received a Bachelor of Science in Civil Engineering, University of Moncton.

Colin Bishop, REHS, RS

Colin Bishop is President of Anua – a company that provides a variety of sustainable Clean Water and Clean Air solutions that can be integrated to simplify life and complement the natural environment. Colin is also the Chief Health Inspector over food safety for the City of Woodville Texas Health Department. He is a Registered Sanitarian in Arizona, Louisiana, Texas, and West Virginia. He is a Registered Environmental Health Specialist through the National Environmental Health Association. He earned a B.S.-Zoology from Brigham Young University.

Robert Wright, PE

Bob Wright is a Registered Professional Engineer, working for a private engineering firm, Alles Taylor & Duke, LLC, in Colorado. Originally from California, Bob's family moved to Alaska in 1962, where he weathered the Great Alaska Earthquake in 1964, attended public school and college, and earned a degree in Biology in 1980. After working as a draftsman in an Anchorage engineering firm for a few years, Bob went back to school to become a civil engineer. He earned his PE license in 1990 and moved to Washington State for 10-years in 1995. He has lived and worked in Colorado since 2005. Bob began working with onsite wastewater treatment systems (OWTS) at an Alaska engineering firm in 1979, and has progressively sought formal training and education in OWTS, starting with classes in Washington at the Onsite Wastewater Training Center in Puyallup, as well as conferences, seminars and publications wherever they were available. Bob works to apply sound OWTS design and construction principles to the systems he designs, and shares those principles and his experience in his classes. In 2009, Bob was an OWTS trainer for the National Association of Wastewater Technicians (NAWT), and helped the Colorado Professionals in Onsite Wastewater bring NAWT training classes to Colorado. Bob assisted in the creation of the NAWT Designer course.

2016 Southwest Onsite Wastewater Conference

Speaker Biographies

Robert Rubin Ph.D.

Robert Rubin is an emeritus professor in the biological and agricultural engineering department at North Carolina State University. He was a visiting scientist with USEPA from 1999 through 2005 where he assisted with development of wastewater management efforts. He currently serves as committee chair for the NSF water use committee.

Dominickus (Nick) Weigel III, PE

Mr. Nick Weigel is a Senior Civil Engineer and company partner, specializing in the design of decentralized wastewater collection, treatment and dispersal systems. For the last 15 years, Nick has focused his energy on onsite wastewater system design, permitting, construction, and operations. His project designs include systems ranging from single-family residential sand filters to commercial and community systems with flows over 50,000gpd utilizing advanced and secondary treatment of wastewater. Specifically Nick's design projects include re-circulating sand/gravel filtration systems, aerobic systems, textile filters, mounds, at-grade sand alternative disposal/reuse options such as drip irrigation and spray irrigation and integrated greywater and stormwater designs. Nick the Lead Trainer and is on the Board of Directors for the California Onsite Water Association (COWA) serving as treasurer for the past 8 years. He has collaborated with COWA members and SWQCB staff to develop responses to AB885 as well as the State Board General Order for Recycled Water and the General Order for Small Discharges to Land. Nick began teaching practitioners for the California Onsite Water Association in 2008 and teaches classes and presents throughout the U.S. and Canada. Nick is a certified National Association of Wastewater Transporters (NAWT) instructor and is currently teaching the NAWT Inspector Training Course, the Consortium of Institutes for Decentralized Wastewater Treatment's O&M Course, and COWA's Soils for Onsite Wastewater Systems, Pressurized Dispersal System Design course.

Rodney Ruskin

Rodney Ruskin is CEO of Geoflow, Inc. of Corte Madera, California. He started Geoflow in 1990 to develop subsurface drip irrigation technology for landscape, agriculture and wastewater disposal and re-use using the ROOTGUARD® technology. He is inventor of 11 patents covering drip irrigation technology, and started Agriplas in South Africa in 1969 to develop drip irrigation technology. He holds a B.S. from University of Cape Town and an M.S. from Harvard University.

Grant Denn

Grant Denn is the Senior Manager for Engineered Projects with Orenco Systems, Inc., a wastewater equipment manufacturing firm based in Sutherlin, Oregon. He was one of Orenco's first employees and has worked in the field of decentralized wastewater for more than 29 years, assisting communities and commercial enterprises in finding wastewater solutions. In 2011, Grant co-founded a consulting firm, H5O Solutions, LLC that specializes in wastewater infrastructure planning for utilities and communities. During his work there, he helped to develop an online planning tool for wastewater infrastructure, and ultimately formed the software company, Virtual Utility, LLC in 2013. Grant has recently authored two articles on the subject of effluent sewers – "Effluent-Only Sewers Offer Alternative to Traditional Systems" (Waterworld, August 2012) and "Hard Data on Effluent Sewer O&M Costs" (Water Environment Federation, May 2013). Grant earned a Bachelor of Science degree in mechanical engineering from Oregon State University in 1986.

Jim Cruver, Ph.D.

Dr. James E Cruver is the President of Salcor Inc., and is the inventor of the widely-used Salcor 3G UV Unit. Founded in 1978, Salcor has developed specialized UV units and processes for wastewater disinfection, toxic chemical destruction, and a FDA-approved UV system for processing liquid food products. Dr. Cruver has a PhD in Chemical Engineering from the University of Washington. He has over 40 years of experience in water treatment, including reverse osmosis, filtration, and disinfection. Dr. Cruver is the author of 70 technical papers, and is the co-author of a graduate level textbook on water treatment.

Jeff Pringle

Jeff Pringle is an Account Manager for the Western US Region at Orenco Systems, Inc., a wastewater equipment manufacturing firm based in Sutherlin, Oregon. In his role, he works to manager and grow customer accounts in California, Nevada, Arizona and Hawaii. Since joining Orenco in 2005, Jeff has become a frequent presenter for Orenco, providing training for regulators, engineers, installers, service providers, and electricians, as well as other Orenco customers. Jeff has an Associate or Applied Science degree in digital systems technology from Umpqua Community College in Roseburg, Oregon.

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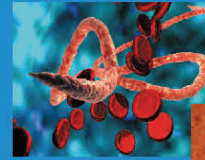
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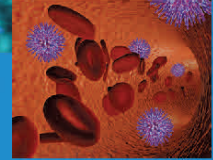
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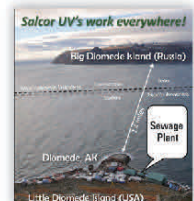
Elementary School, MO
3 Salcor 3G UV Units (Parallel Array) in Extended Aeration



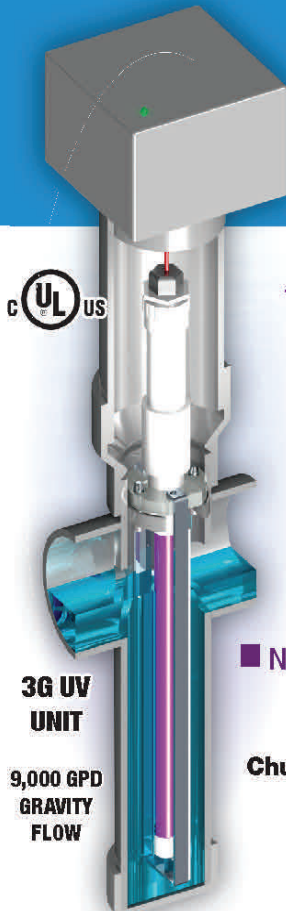
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