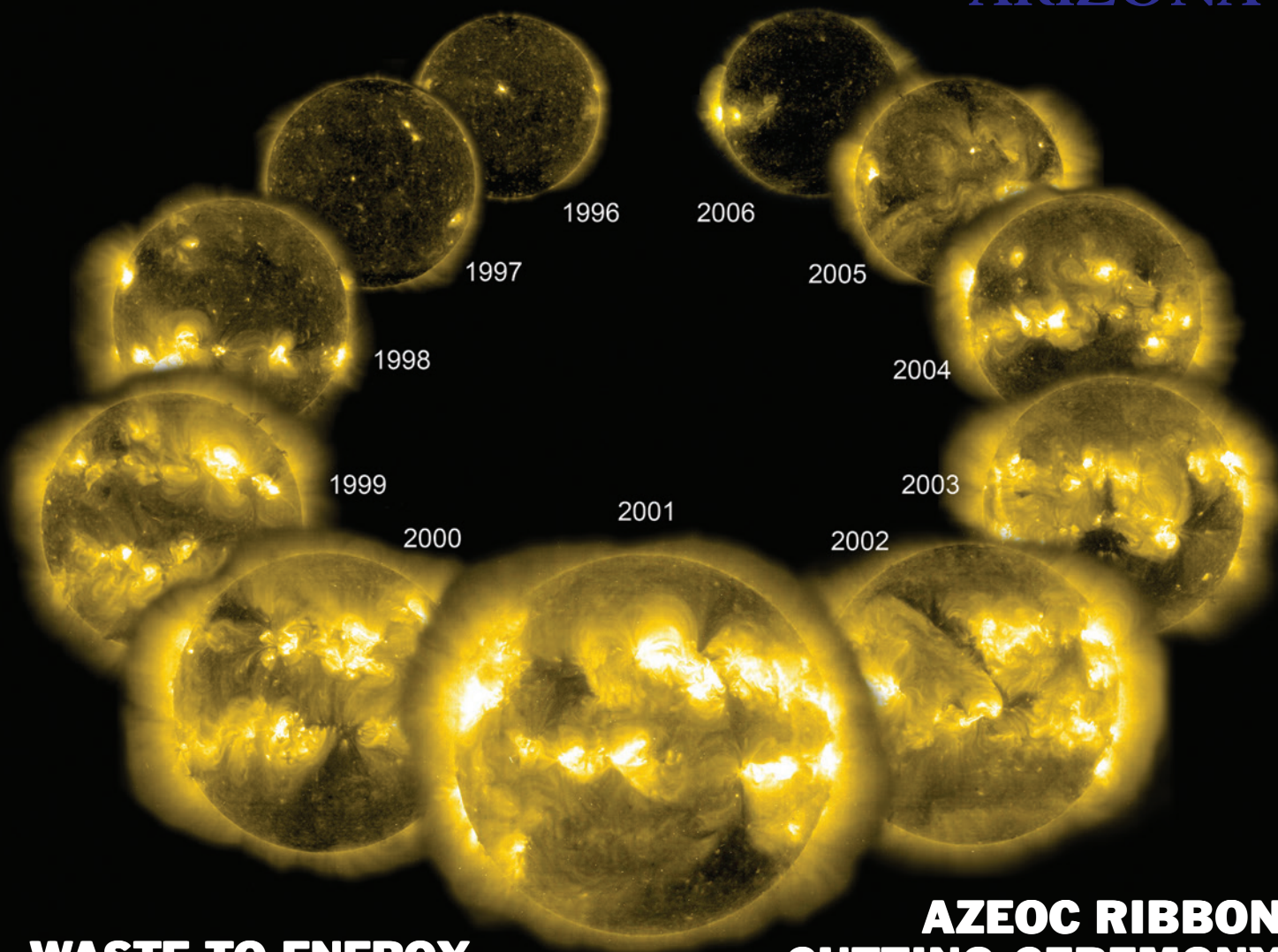


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**LARRY OLSON, PhD. Pg 12**

**HOW CAN WE VALIDATE  
GREEN PRODUCT  
ATTRIBUTES?**  
**DANIEL J. OSTERMAN Pg 5**

**AZEOC RIBBON  
CUTTING CEREMONY**  
**DANNY PETERSON, PhD. Pg 6**

April / May 2012 Vol 10 No. 2

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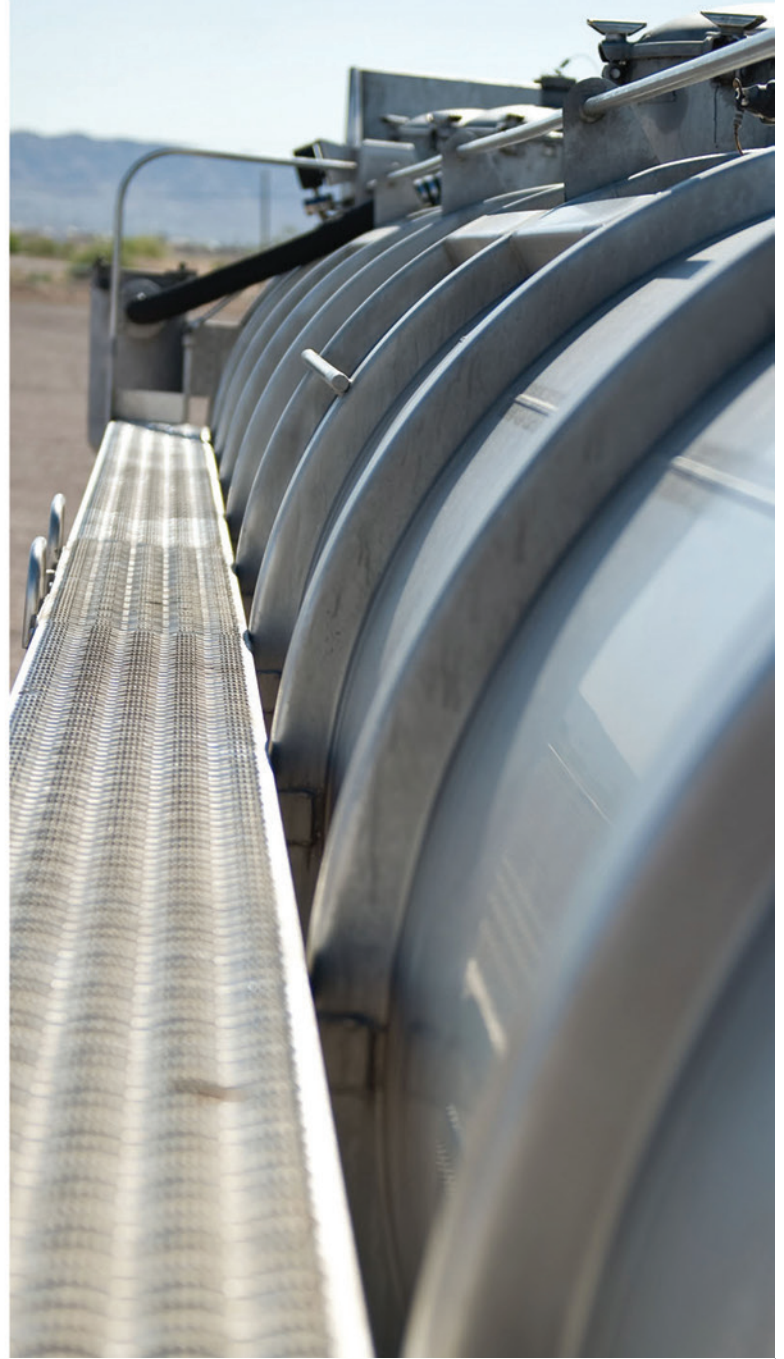




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# JOURNAL OF Environmental Management

ARIZONA

## CONTENTS

April / May 2012

Volume 10 Number 2

## ARTICLES, DEPARTMENTS, & COLUMNS

- 4 FROM THE EDITOR**
- 5 HOW CAN WE VALIDATE GREEN PRODUCT ATTRIBUTES?**  
*DANIEL J. OSTERMAN, LEED AP BD+C*
- 6 RIBBON CUTTING CEREMONY ASEOC**  
*DANNY PETERSON, PHD.*
- 8 ATC ASSOCIATES ACQUIRED BY CARDNO**
- 9 SUSTAINABILITY AND SUSTAINABLE DEVELOPMENT**  
*NICHOLAS R. HILD, PHD.*
- 10 ASSOCIATION PAGES**
- 12 IT'S ALL ABOUT CHEMISTRY**  
WASTE TO ENERGY / *LARRY OLSON, PHD.*
- 13 NEWS BRIEFS**
- 14 REGULATORY DEVELOPMENTS**  
*MICHAEL C. FORD, ATTORNEY; POLSINELLI SHUGART*
- 15 GATEKEEPER REGULATORY ROUNDUP PHOTOLAYOUT**

## FROM THE EDITOR



This was a fun issue of the Journal to put together, and includes several especially interesting columns and articles, and photographs. I think you will find a number of articles you will enjoy reading. And if you do read an article you particularly like, please call the author and let him/her know. I know they will appreciate it!

Occasionally, I need to address the topic of advertising -- so a few short words on this subject: "Modesty" might not be the best quality to have in a marketing person. Perhaps it is even a fault, because sometimes you just have to "toot your own horn", even if that is an outdated expression. And part of my work as publisher of the Journal is to market access to our audience of Arizona environmental professionals to advertisers. So, let me just say, in a modest way, I've noticed a very strong correlation between the most well-attended environmental conferences in Arizona and the amount of marketing done to promote them, including advertising in the Journal. If you are a long-time reader of the Journal, you have probably noticed this yourself. Perhaps the professionals who are most likely to attend a conference are also the ones most likely to regularly read the Journal. Please keep this in mind if you are part of an organization sponsoring an upcoming event, or if you are an environmental service provider and want to keep your name in front of your potential clients.

Sincerely,

Jim Thrush, M.S. Environmental Management  
Editor & Publisher

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# HOW CAN WE VALIDATE GREEN PRODUCT ATTRIBUTES?

by Daniel J. Osterman

In this day of endless television commercials and magazine advertising there are many product and material claims that provide the basis for consumer purchases. Some of these purchases are made purely on impulse without any examination of the true costs and benefits. Products and materials in the sustainable industry are sometimes procured without additional investigation as well.

Just because a product has some sustainable features is it truly sustainable? Is a product truly sustainable if: the product is made using sustainable components, and uses an excessive amount of water in the manufacturing process; if the product meets all of the recycled requirements and disbursts more pollutants than a comparable product; if the product at the end of its useful life has to be disposed of at a landfill and doesn't biodegrade for 50 years?

## HOW DOES ONE REALLY KNOW IF A PRODUCT IS TRULY SUSTAINABLE?

There are three different levels of certification: first party, aka self-certification; second party, aka industry certification; or third party, aka independent party certification. The first party certification occurs when the product manufacturer tests against conditions that supposedly qualify the product as green. Industry certification, second party, is when the product meets consensus based standards established by an industry's trade organization. The third level of certification is when the product is certified from a range of organizations outside of the industries seeking certification. It is rather obvious that independent organizations such as the Scientific Certification Systems ([www.scscertified.com](http://www.scscertified.com)), and the Cradle to

Cradle ([www.mbdc.com](http://www.mbdc.com)) certification carry the strongest weight and validity with green building product certification.

## LABELING

There is a movement in the sustainability industry to start labeling sustainable products the way nutrition labels are placed on food. Perkins+Will and Construction Specialties have teamed up to develop the "Building Product Transparency Label". Using *Pedisystems PediTred G4* by ConstructionSpecialties (<http://transparency.c-sgroup.com>) as an example, the label itself would include some of the following information (the balance of the information is located on the product website): general product information, product content, ecological benchmarks, renewables, packaging, product design process, recyclability and certifications.

The general product information indicates the manufacturer, the warranty period and the product websites. Recycled content, content source, final manufacturing location, and whether the product is rapidly renewable, FSC certified or contains VOC content is also noted. The ecological benchmarks tracked include water use intensity, energy use intensity and carbon emissions. There is a section to note whether renewable water or renewable energy is used. The packaging portion of the label tracks whether the material is virgin, post-consumer or post-industrial. The design process identifies whether the product was designed for reutilization or in a closed loop process. There is also a space on the label to identify whether recycling assistance is offered, whether there is a Want Back program and an actual listing of recyclable components. The next section identifies care and maintenance and product replacement. The final section lists the various certifications that apply to the product.

The transparent label as described above is a great start to continuing the evolution of the sustainability movement. However, until we as an industry explore all of the impacts that products have on the social and environmental attributes during the product's entire life cycle, not just the economic aspects, we will not leave this earth for our children and grandchildren better than we found it.

Daniel J. Osterman, LEED AP BD+C, is a Preconstruction Project Manager with Sundt Construction, Inc. in the Southwest District. He can be contacted at 520-750-4643 or by email at [djosterman@sundt.com](mailto:djosterman@sundt.com). For more information on Sustainability visit [www.usgbc.org](http://www.usgbc.org).

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# RIBBON CUTTING CEREMONY AT ASU POLYTECHNIC OPENS ALTERNATE STATE EMERGENCY OPERATIONS CENTER



Danny Peterson, Professor of Practice in the Department of Applied Sciences and Mathematics in the College of Technology and Innovation (left) cuts the ribbon to symbolically open the Arizona Alternate Emergency Operations Center. Arizona Division of Emergency Management Director Lou Trammell (right) said, "the partnership with ASU is key to helping the state be prepared to respond to an emergency." *Photo courtesy of AZDEM.*

By: Danny Peterson, PhD

The 22<sup>nd</sup> of February, this year, witnessed a momentous occasion with the ribbon cutting and commissioning of the new, state of the art, Arizona Alternate State Emergency Operations Center (ASEOC). The ASEOC was moved to the new location which was retrofitted with cutting edge technology. This critical resource now shares a large building on the ASU Polytechnic campus with the Aerospace Physiology program, aka, High Altitude Chamber. This ASEOC,

however, is far more than an alternate location for the Arizona Division of Emergency Management. It serves as a laboratory for teaching and research within the Environmental and Emergency Management program at ASU—Poly as well as a simulator for integrated emergency operations management training.

## WHAT IS AN EMERGENCY OPERATIONS CENTER?

According to the USCG, an EOC is "The pre-designated facility established by an agency or jurisdiction to coordinate the overall agency or jurisdictional response and support to an emergency. The EOC coordinates information and resources to support domestic incident management activities."<sup>1</sup> DHS further clarifies this definition by saying "EOCs help form a **common operating picture** of the incident, relieve on-scene command of the burden of external coordination and secure additional resources. The core functions of an EOC include coordination, communications, resource dispatch and tracking and information collection, analysis and dissemination."<sup>2</sup> In actual practice, mainstay EOCs such as those of States, counties, large municipalities, large corporations, etc., live up to this definition. Most others probably fit more appropriately into a definition posited by Art Botterell—An EOC is "Where uncomfortable officials meet in unfamiliar surroundings to play unaccustomed roles, making unpopular decisions based on inadequate information, and in much too little time."<sup>3</sup>

## PARTNERSHIP

The Arizona ASEOC showcases an exemplar capability reflected by the power of partnership among State agencies. The Arizona Division of Emergency Management and Arizona State University have partnered in building this facility and adding yet another resource to the emergency management arsenal and developing a critical link between academic theory and the world of practice. The facility has two capability modes—Real World and Simulation. In the Real World mode, it is a state-of-the-art Emergency Operations Center that can be used by ADEM during unique emergency responses when the primary State EOC located at Papago Park is not available. At all other times, it becomes an academic laboratory and simulator for teaching integrated emergency management operations.

## THE EXERCISE CONTROL CENTER (SIMCELL)

Figure 1 (left) is a functional depiction of the facility's operation. During normal, real world activations, the ASEOC functions as any other well equipped and technically capable EOC. During the simulation mode, however, all communications are routed to a discrete Exercise Control Center (SIMCELL). Eight video/audio cameras throughout the facility terminate in the SIMCELL allowing a Controller team of up to five individuals to orchestrate an exercise scenario. The players in the EOC response sections use real names and phone numbers published in an exercise resource phonebook. Each number in the book is coded through custom IT programming of the Voice Over Internet Protocol (VoIP) telephone system. The result is furnishing the Controllers in the SIMCELL, not only caller ID of a player, but also who the player is trying to reach. Controllers can then play the roles of these target resources commensurate with exercise injects and objectives. The system also allows select access to external players.

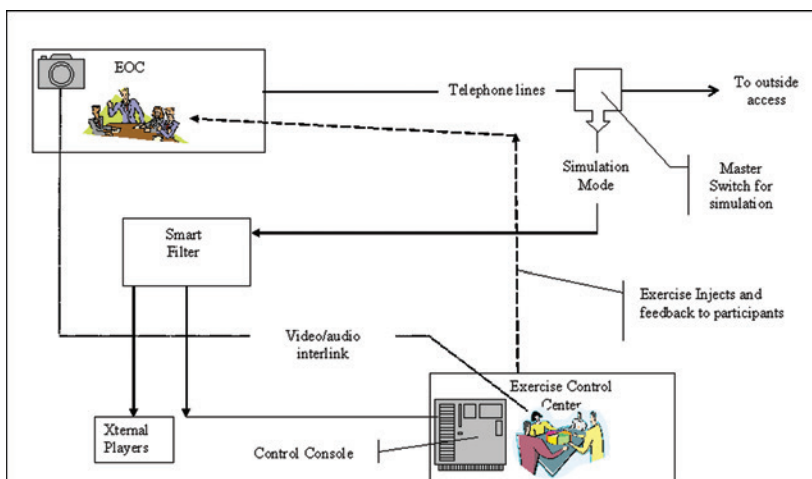


Figure 1. Exercise Control Center Operation





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The ultimate goal of this facility is to provide a training program and simulation experience so that all officials will be comfortable in their roles and gain experience and confidence in making decisions that might impact life and the environment as well as stirring political discord. Simulators have proven their worth in aviation for decades where aviators can develop their skills and make mistakes without dire consequences.

Danny Peterson is a Professor of Practice, College of Technology and Innovation, Department of Applied Sciences and Mathematics Faculty at the ASU-Polytechnic Campus. He teaches graduate and undergraduate courses including Integrated Emergency Management, Terrorism and WMD, several classes in Homeland Security, and numerous courses in emergency management. Dr. Peterson can be reached at 480-727-1100 or by email at [DrP@asu.edu](mailto:DrP@asu.edu).

#### FOOTNOTES

- 1 USCG, *IM Handbook*, 2006, Glossary 25-6.
- 2 DHS, *NRF Comment Draft*, 2007, pp. 48-49.
- 3 Cited in: National Research Council of the National Academies (2007). *Improving Disaster Management: The Role of it in Mitigation, Preparedness, Response, and Recovery*. The National Academies Press. pp. 18.



Guests and members of the press listen to Danny Peterson and Arizona Division of Emergency Management Director Lou Trammell speak during the ribbon-cutting ceremony for the Alternate State Emergency Operations Center. Photo courtesy of AZDEM.



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# CARDNO COMPLETES ACQUISITION OF ATC ASSOCIATES

**A**TC Group Services Inc. announced recently it has finalized its merger with Cardno, an international Australian-based professional services firm. ATC is now part of the Cardno family of companies with more than 6,400 staff working on projects in 85 countries.

"Although the ownership has changed, it will be business as usual for ATC and its 1600 employees," ATC recently said in a message to clients.

ATC's name remains the same until later this year, when ATC Associates Inc. will become Cardno ATC. The addition of Cardno ATC further strengthens Cardno's exposure to the US environmental and natural resources management market and is highly complementary to Cardno's existing businesses in the US. The merger further cements Cardno's position as one of the nation's largest environmental consulting firms, with a broader access to key US clients such as oil, gas and energy companies and

major contractors and retail groups.

Bobby Toups, President of ATC, said the merger marks an important step in the next chapter of growth for ATC.

"Our motivation to seek a partnership with an international firm like Cardno was three-fold. First to provide our clients with a wider range of services and locations; second to provide our talented staff with additional opportunities for career development; and third to accelerate the growth of ATC across the US and overseas."

"ATC is a growth-oriented, profitable business and by combining with Cardno we will be able to expand organically and look to complement our existing discipline offering with targeted acquisitions", said Mr. Toups.

ATC brings to Cardno specialized expertise in environmental consulting, building sciences, geotechnical and construction materials testing services. Headquartered in Lafayette, LA, ATC has 71 offices located across 39 US states.

Cardno brings to ATC a broader range of environmental, natural resource management, engineering, international development assistance, project management and planning services across many countries including Australia, New Zealand, United States, United Kingdom, Ecuador, Peru, Colombia, Indonesia, Kenya, Sri Lanka, China and United Arab Emirates.

Additionally, Cardno's leadership in social infrastructure work was a compelling reason for ATC to consider this relationship. Cardno provides opportunities for ATC staff to become part of a committed, global focus to help developing nations and countries adversely affected by natural disasters and conflict to build and implement social and physical infrastructure programs.

With the addition of ATC, Cardno's American operations now comprise more than 4,000 staff across 186 locations with additional branch offices in Canada, Ecuador, Peru, United Kingdom, Germany and Belgium. Cardno's other U.S. businesses include Cardno ENTRIX, Cardno ERI, Cardno WRG, Cardno TBE, Cardno TEC, Cardno Emerging Markets and XP Solutions.

ATC Associates maintains a website at [www.atcassociates.com](http://www.atcassociates.com) and the Tempe, Arizona office can be reached at 480-894-2056.

## FOR ARIZONA CLIENTS: "BUSINESS AS USUAL"

*Joe C. Holmes, Regional Manager of Business Development at ATC Associates, stated to the Journal:*

"I am excited about our prospects. Our ability to service clients has been unaffected by the acquisition. In fact, it will be supplemented by additional staff in Cardno ERI, and Cardno WRG."

Joe C. Holmes



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## SUSTAINABILITY AND SUSTAINABLE DEVELOPMENT

Nicholas R. Hild, PhD.

In the last Journal issue, you learned that I had retired from academe and have embarked on a new career—retirement! What I have discovered in the nearly nine months that I have been living my new life of leisure is (as I had predicted before retiring):

*“How dull it is to pause, to make an end,  
To rust unburnished, not to shine in use!  
As though to breathe were life!”*

...from Tennyson’s *“Ulysses”*

Yes, ‘tis true. The many things we all say we would do if only we had the time, quickly get accomplished (or not...) and I find myself thinking of times past that bring me sweet memories of friends and colleagues and past projects shared in the environmental, health and safety field.

And, although I no longer have the energy or motivation to ‘hustle’ for those same kinds of jobs now, it gives me something to think about as I look for “activities” that will keep me from *‘rusting, unburnished...’* in my pursuit of leisure.

One of the things I have come to realize is, no longer having to pursue grants and funded research has left me with no reason (other than for self-satisfaction) to read and pursue the literature of the EH&S field(s) so I am truly in danger of not maintaining my expertise and keeping up to date. For someone who has for 40+ years, participated, managed, and/or directed hundreds of EH &/or Safety projects both in the real (industrial) world as well as consulting and in academe, that has come as a startling revelation!

My leisure pursuits (i.e. hobbies and business interests) have mostly been right-brain focused and

while satisfying from an ‘artistic’ standpoint, really don’t provide the impetus or motivation to conduct the research or read in the journals that gave me my happiness quotient (i.e. my term for quantifying my level of enjoyment that drove me every day to participate in the EH&S field)—I always felt that the next project that would be my contribution to solving an EH or S problem, was just a matter of learning how to implement a solution that synthesized and utilized the technology and tools to help make the earth a cleaner place—but, now there’s no “vehicle” (i.e. no industry, college, or consulting firm) that demands my expertise every day. And that, I have come to realize, was always the motivation: my employer (and the paycheck) was a bigger driving force than my desire to “serve the environment” by searching out the solutions to complex EH&S problems. What a revelation!

So, as noted, after nine+ months of leisure pursuits, I have once again found a way to stay motivated and to try to keep up with the latest EH&S literature, especially as it relates to “sustainability” and all its definitions (which, as we learned in our classes, there are many...). I am now in pursuit of “volunteering” my service to as many organizations as can reasonably be fit into my leisure schedule. I have discovered that, if I have a reason (i.e. because an organization needs me to know the latest technology, techniques, or tools to be able to contribute to a complex problem’s solution), it will motivate me to keep reading the literature and conducting research.

I have re-joined the Arizona Strategic Environmental Alliance as a ‘volunteer’ Board of Advisors member, and I have recently completed service to the Arizona Game and Fish Department Retenone Review Advisory Committee that was organized to deal with the use of that pesticide (a word I learned just by being on this committee!) for elimination of non-native fish in Arizona waters and make recommendations to the Arizona legislature for its use. Both those ‘voluntary’ services gave me the motivation to keep myself up to date and the Alliance will require me to do even more going forward.

Oh, and I have not forgotten my most important reason for wanting to maintain my expertise in all things “Sustainable:” I am always hopeful that my next project (or volunteer service) will give me the tools to help me make the future brighter for our children’s, children’s, children.

Nicholas R. Hild, PhD., Professor and Associate Chair, Department of Applied Sciences and Mathematics, Environmental Technology Management program, Arizona State University College of Technology and Innovation, has extensive experience in Environmental Management in the southwestern U.S. Dr. Hild can be reached at 480-727-1309 and by email at DrNick@asu.edu.

# ASSOCIATIONS PAGES

The Journal of Environmental Management Arizona invites environmental, health and/or safety organizations in Arizona to contribute news articles about their associations. Contact the editor at 480-422-4430 x42.



WWW.AZHYDROSOC.ORG

The Arizona Hydrological Society (AHS) and the AHS Foundation will award **three \$2,000** student scholarships in 2012. The purpose of this award is to encourage full-time students of hydrology, hydrogeology, or any other water-resource-related fields at any Arizona university or college to excel in their area of study. Any junior, senior or graduate student who fits this description can apply. Applications for the Scholarship must be submitted by May 31, 2012. Please visit the AHS scholarship web page at <http://www.azhydrosoc.org/scholarships.html> for details.

The AHS Phoenix Chapter will be hosting the 2012 AHS Symposium at the Desert Willow Conference Center (DWCC) on Sept. 18-21, 2012 in Phoenix. The DWCC is conveniently located near 48th Street and Broadway Road just off Interstate 10. We have a variety of half day workshops offered plus some great plenary sessions planned!

Companies and vendors interested in sponsorship and booth space can visit <http://azhydrosoc.org/2012Symposium/sponsors.html> for more information.

Christie O'Day  
Executive Director



WWW.SAEMS.ORG

While the change in the seasons can be subtle in southern Arizona, it is obvious to the committees behind the scenes for the Southern Arizona Environmental Management Society that we are in the "busy" season. The Seminar Committee is completing the plans for the annual RCRA Seminar to be held May 10, 2012. This seminar is our major scholarship fund raiser, and this year it will include a celebration of SAEMS 25<sup>th</sup> anniversary.

The Scholarship Committee is reviewing applications for the 2012 - 2013 academic year at the University of Arizona. Paring the list down to the finalists is always a challenge, as are the final decisions made after the interviews.

Several members of the SAEMS Executive Committee were involved in the annual Tucson Earth Day Festival. The event held April 21 was bigger and better than ever!

Finally, the challenge of maintaining the momentum of SAEMS in promoting our ambitious environmental agenda is being met by the Nominating Committee. An on-line ballot for the 2012 - 2013 Executive Committee will be presented to the membership in May. The new members of the committee will assume their responsibilities at the June meeting.

Ken Asch  
President



## SOUTHERN ARIZONA AMERICAN SOCIETY OF SAFETY ENGINEERS

Don't forget to save your spot at the annual Southern Arizona ASSE Banquet. This year we will be at the Tucson Mini-time museum on Thursday May 24<sup>th</sup>. You can take a self-guided tour at 5:30, then dinner and banquet will begin at 6 PM. We will

have former Southern Arizona Chapter President and author Ron McKinnon, CSP as our key speaker.

Ron C. McKinnon, CSP, is an internationally experienced and acknowledged safety professional, author, motivator and presenter. He has been extensively involved in safety research concerning the cause, effect, and control of accidental loss, near miss incident reporting, accident investigation, and safety promotion.

Please contact Gerry Coley at [GColey@scfz.com](mailto:GColey@scfz.com) for any further questions or to reserve your spot. Limited seating is available.

Alexis Westin  
Secretary



WWW.EIA-AZ.ORG

The Environmental Information Association (EIA) will be hosting the Regional Environmental Conference in Phoenix October 4-5, 2012. The conference will be at the Arizona Golf Resort located at 425 South Power Road, Mesa, Arizona. The conference will be a full day Thursday and a half-day Friday and will be offering break-out sessions featuring topics relating to indoor air quality, asbestos, lead-based paint, regulations, the latest in environmental equipment with local and national vendors, analytical laboratories, and local and regional regulators. Those who plan to attend should plan on having some fun too!

The EIA will also be hosting an asbestos awareness seminar in Hon-Dah, Arizona in the White Mountains, which is a great place to be in July and various awareness seminars in California. Please visit our website for additional information regarding these seminars.

Please visit our web site at <http://www.eia-az.org> or contact the organization's president Mr. Joe Palermo at [palermo@ihi-env.com](mailto:palermo@ihi-env.com) for information on all upcoming events sponsored by EIA-AZ and for membership and sponsor opportunities.

Vicky Aviles  
Past President



WWW.VALLEYFORWARD.ORG

## THE ECONOMICS OF ARIZONA'S FOREST RESTORATION

We're fast approaching fire season where winds, drought and high temperatures combine to make Arizona's forests extremely dry and at risk for severe wildfire. The Four Forest Restoration Initiative (4FRI) recognizes the importance of restoring our forests to a more natural and healthy composition of fire-adapted ecosystems. It provides for fuels reduction, forest health, and wildlife and plant diversity. This important collaboration is the largest restoration effort in the United States and will facilitate landscape-scale restoration of ponderosa pine forests in northern Arizona, protecting not only

precious landscapes and the Valley's water supply but generating jobs and enhancing our local economy.

Experts involved in the 4FRI project will speak at a forum next month to facilitate education and outreach on this important environmental topic. Speakers include: Henry Provencio, 4FRI team leader at the U.S. Department of Agriculture; Wally Covington, executive director of the Ecological Restoration Institute at Northern Arizona University; and Marcus Selig, Arizona Forest Conservation program manager at Grand Canyon Trust. The panel will be moderated by Bruce Hallin, director of Water Rights and Contracts at Salt River Project. More information is available at [www.valleyforward.org](http://www.valleyforward.org).

Diane Brossart  
President



WWW.AZBAS.NET

AzBAS met on March 8th at Republic Services. There were 48 people in attendance. Republic Services, one of the nation's leading recycling and solid waste management companies, hosted the March annual meeting and shared with attendees information on the company's sustainability program, which includes many innovative ways to conserve resources, manage materials and generate renewable energy. Highlights include:

**Natural Gas Fleet:** In 2012, 65 percent of the 1,000 trucks the company will purchase will be cleaner, quieter natural gas vehicles. Republic operates the 8th largest private fleet in the nation, so this investment has the potential to make a huge difference.

**Recycling:** Republic recycles approximately 4 million tons of materials annually and is investing \$50-\$70 million per year to double that capacity in the next five years.

**Renewable Energy:** Republic pioneered the technology of a flexible solar cap which converts solar energy to electricity while accommodating landfills' needs for flexibility. Solar projects in Atlanta and San Antonio add to the company's renewable energy portfolio which includes more than 75 landfill gas projects. The projects provide more than 379,000 homes with heat or electricity, with an environmental benefit equivalent to removing nearly 4 million cars from the road.

Sheila Hamilton  
Executive Director



WWW.EPAZ.ORG

Hope you made it to the 8th Annual Gatekeeper Regulatory Roundup (see article and photographs on page 15).

The Environmental Professionals of Arizona (EPAZ) mission statement is "To Promote Effective Management of Pollution Prevention Efforts throughout the Environment". EPAZ members strive for the following:

- Foster environmental leadership
- Encourage both environmental and economic sustainability through pollution prevention
- Improve communications and cooperation between industry and government
- Promote networking opportunities to exchange



ideas on reducing hazardous wastes and toxics use

- Provide information to identify, evaluate and implement pollution prevention strategies and policies
- Sponsor educational, outreach and mentoring activities and events that emphasizes regulatory compliance and pollution prevention

Our next monthly meeting is May 2012 at the PERA Club, featuring Rolf Haden, PhD, PE, Professor of Engineering, ASU Biodesign Institute. See our website for all the details: <http://www.epaz.org/epazportal/>.

Mike Ford  
President



[WWW.AWMA-GCS.COM](http://WWW.AWMA-GCS.COM)

The Grand Canyon Section (GGS) of the Air & Waste Management Association recently held elections for the positions of directors. The results of that election were the appointments of the following:

**Directors:** Chair - Bill Jamieson SWCA Environmental Consultants, Vice Chair - Mike Sonenberg JBR, Kale Walch Pima County - Secretary, Steve Ochs AMEC - Treasurer, Jamie Wilson JBR - Past Chair

**Board Members:** Darcy Anderson AMEC, Barbara Cenalmor Pima County, Marc Erpenbeck Snell & Wilmer, Zig Fang Tucson Electric and Mark Hajduk Arizona Public Service

The board had a vacancy for which there were two write-in candidates in the recent election, Dr. Kenneth E. Parsons of Embry-Riddle Aeronautical University and Pedram "Pete" Shafieian Applied EnviroSolutions. A runoff election is planned in the next month to fill that vacant seat.

The GGS is developing a schedule and topics for the April and May, 2012 meetings and is currently planning a meeting for April 19<sup>th</sup> and May 17<sup>th</sup>. Details will be announced to membership shortly.

I want to thank each of the members who participated in the election and to extend thanks to each of the individuals who volunteered to serve as directors and board members.

Bill Jamieson  
Chair



#### Arizona Chapter



American Society of  
Safety Engineers  
[AZ.ASSE.ORG](http://AZ.ASSE.ORG)

Incredible!! The Arizona Chapter of the American Society of Safety Engineers just held its 4<sup>th</sup> annual Health and Safety summit (see photo below). The event was held at the Arizona Golf Resort and was regarded a huge professional success! There are too many people to recognize in this small article but there were many volunteers who helped to make this Summit the success that it was. The Summit showcased 12 vendors and 122 attendees. Sessions included a great opening keynote from Darrin Perkins, ADOSH Director and "Green Beans and Ice Cream" from Bill Sims Jr.

The next Health and Safety Summit will be next year the week of April 22, 2013. Mark your calendars now!!! The chapter will have a luncheon on May 4<sup>th</sup> at the Arizona Country Club in Phoenix. The speaker is Jim Gallup from the Southern Arizona Chapter. He will be discussing Fire Protection and Fire Safety.

Hope to see you there!

Tim  
Page-Bottorff  
President-Elect



Photo: One of the morning break-out sessions at the AZ ASSE Health & Safety Summit



#### Jason Bolen

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The Arizona Manufacturer's Council will hold its 2012 Manufacturer of the Year Awards luncheon on Friday, May 11th at the Hyatt Regency Downtown Phoenix hotel located at 122 North 2nd Street. A pre-awards summit and trade show will begin at 9:00 AM with awards being presented at 12:00 PM. The luncheon speaker will be Governor Jan Brewer. Congressmen Paul Gosar, Ben Quayle and David Schweikert will also be in attendance. Come and join us in honoring Manufacturer of the Year award recipients.

The Arizona Chamber and Manufacturers Council Environment Committee will hold its next breakfast meeting on Wed., May 9th at the Sheraton Phoenix Airport Hotel. Breakfast is served at 7:00 AM with speakers beginning at 7:30. See [azchamber.com](http://azchamber.com) for more details.

Jeff Homer  
Chairman  
Environment  
Committee



ARIZONA  
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[WWW.AZALLIANCE.ORG](http://WWW.AZALLIANCE.ORG)

Alliance members and invited guests will tour the PING golf club manufacturing facility in Phoenix early in May. Matt Conway, and Rob Barnett, will host the tour and discuss some of PING's environmental sustainability practices and waste reduction successes. Future tours of other member facilities are planned for later in the year. These tours contribute to the goals of the Alliance for sharing information among members and mentoring.

For information about opportunities for mentoring in environmental leadership, please contact the Alliance office at 480-422-7392.

Dan Casiraro  
Chair



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Larry Olson, PhD.

### IT'S ALL ABOUT CHEMISTRY

## WASTE TO ENERGY

It wasn't always this way. Before James Watt perfected the steam engine about the time of the American Revolution, our main sources of energy were almost all renewable. Wood or dung was burned to provide for home heating and cooking. Hydropower was used to turn wheels for grinding grain and wind to pump ground water to the surface. Petroleum was considered an undesirable by-product when you were drilling for water. Lamps were mostly lit with whale oil, but about 1850 a method of distilling kerosene from petroleum was developed and a new market emerged. The first oil well in the U.S. was drilled in 1859 in Titusville, PA. It was 69 feet deep.

Today, fossil fuels (oil, coal, and natural gas) represent over 78% of the America's total energy supply ([http://www.eia.gov/totalenergy/data/annual/pdf/sec1\\_5.pdf](http://www.eia.gov/totalenergy/data/annual/pdf/sec1_5.pdf)). Nuclear is at 11.3% with renewable (hydro, solar, wind, geothermal, and biofuels) representing only 10.7%.

If we consider transportation fuels, the dependence on fossil fuels is even greater (more than 97% in 2008). Of the 209,837 million gallons petroleum consumption in the transportation sector (<http://www.c2es.org/technology/overview/transportation>), the breakdown was:

134,939	million gallons	gasoline
43,888	"	diesel
23,333	"	jet fuel
237	"	aviation gasoline

Alternative fuels consisted of only 6,495 million gallons of ethanol and 324 million gallons of biodiesel.

There are a number of strategies being pursued to try to break this dependence upon fossil fuels. One goes under the name of "waste to fuel." The most common example is incineration of municipal solid waste to produce electricity or steam. With the added advantage of diverting solid waste from increasingly scarce landfills, this would seem to be a win-win situation all around. Indeed, there are new waste to energy plants being installed all over the world (<http://www.seas.columbia.edu/earth/wtert/index.html>). But it is not necessarily a panacea. Besides the practical considerations of the volume and heat content of waste available, high capital and operating costs of these plants, and price and reliability compared to a new natural gas plant, there is the issue of air pollution and the disposal of remaining ash. Toxic air pollutants include trace metals, particulate matter, and dioxins, as well as nitrogen and sulfur oxides so that stringent emission controls may need to be applied.

There are actually many more options for making electricity from alternative sources to fossil fuels than there are for liquid fuels such as gasoline and diesel. Most of the biofuels now in use (ethanol and biodiesel) are derived from crops such as corn, sugar cane, soybeans, or canola that are grown on arable land. As we've discussed in this column before, there isn't enough arable land in the U.S. for biofuels from crops to make significant dents in the amount of petroleum used for transportation, to say nothing of the impact on food prices. Cellulosic ethanol and oil derived from algae have great potential to change this equation, but their present use is very limited and significant technical challenges remain to be solved.

Nevertheless, there is significant pressure to find alternative transportation fuels. In California, the *State Alternative Fuels Plan* for 2017 calls for an 11% penetration of alternative fuels within just 5 years. One largely unexplored option is to convert biomass into diesel using the Fisher Tropsch process that Germany used to convert coal into liquid fuels in World War II. Estimates are that biomass produced annually in California could replace up to 41% of the transportation diesel in this way.

It has taken 150 years to create our addiction to fossil fuels and we aren't going to be able to reverse that overnight. There also isn't just one magic bullet that miraculously gives us clean, cheap and renewable energy. But we do have many more technological options to explore and the possibility of mining our waste streams is intriguing.

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Larry Olson, PhD., Associate Professor, Arizona State University Environmental Technology Management Program. Dr. Olson holds a Ph.D. in Chemistry from the University of Pennsylvania, and is an environmental chemist with interests in remediation technologies and international environmental management. He can be reached at 480-727-1499, or by email at [Larry.Olson@asu.edu](mailto:Larry.Olson@asu.edu)



# NEWS BRIEFS

## ADEQ ISSUES FIRST "STOP-USE ORDER" BECAUSE OF LEAKING GASOLINE TANKS IN SNOWFLAKE

❖ The Arizona Department of Environmental Quality announced recently it has issued its first "stop-use order" for leaking underground storage tanks that are potentially threatening the public health and environment in the Town of Snowflake. "Although we normally attempt to work these issues out with companies, this case was severe and made it necessary to use this enhanced enforcement tool," said ADEQ Director Henry Darwin.

ADEQ inspectors placed stop-use tags on the operation of five underground storage tanks owned by Milton Capital LLC at One Stop 2 convenience mart, located at 379 S. Main Street in Snowflake.

Milton Capital LLC had a 1,200-gallon gasoline release from one of the tanks at the site in late February. That release resulted in the mobilization of emergency personnel and the evacuation of an adjacent apartment complex and restaurant, both of which remain closed.

The fuel dispenser at the site had been illegally re-engineered before the February release and an emergency stop button no longer was tied to the tanks system. A fuel delivery driver accidentally filled one of the tanks because the operator also failed to label the tanks as required by Arizona Department of Weights and Measures regulations.

The driver was unable to stop the pumping process because the emergency stop button was not properly connected.

The entire contents of the tank were emptied into the sump which resulted in flow across the ground surface and through the soil under the pavement. ADEQ issued a notice of violation to Milton Capital for failure to comply with a number of statutes including notification, line testing, financial responsibility and failing to permanently close tanks.



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## INDUSTRIAL SERVICES | WASTE MANAGEMENT

## MARK CALIENDO JOINS "EQ - THE ENVIRONMENTAL QUALITY COMPANY"

❖ EQ - The Environmental Quality Company (EQ) recently announced that Mark Caliendo has joined EQ as an Account Executive in the Arizona market.

Mark brings over 25 years of experience to EQ. He will help support the company's growing customer base in the western United States.

According to EQ, "We combine innovative technologies and services that minimize waste volumes and reduce costs while protecting the environment."

EQ has provided environmental management services for over 55 years, and offers a broad range of services at its 28 locations across the United States, including: Hazardous Waste Treatment & Disposal; Total Waste Management; Recycling; Remediation; Emergency Response; Industrial Services; and Transportation.

Mark can be reached at 602-549-7212 or by email at [mark.caliendo@eqonline.com](mailto:mark.caliendo@eqonline.com).

EQ maintains a website at [www.eqonline.com](http://www.eqonline.com) and can be reached at 800-592-5489.



**Mark Caliendo**  
EQ - The Environmental Quality Company



Michael C. Ford, Attorney

## REGULATORY DEVELOPMENTS

In case you missed it, this year's Gatekeeper Regulatory Roundup (*the 8<sup>th</sup> annual—see photos next page*) was better than ever (and I'm not just saying that because I'm the chair!). We had over 200 attendees during the two-day event, 36 speakers and 23 sponsoring companies, with many informative and useful presentations, and attendees coming in from all over the state and beyond. Our distinguished speakers included several representatives from EPA Region 9; the air quality department directors from Maricopa, Pinal and Pima counties; and the Deputy Director and Division Directors from ADEQ, so there were some great opportunities to flatter/impress/harangue your local, state and federal regulators. Among the event highlights (for me at least):

- Maricopa County Air Quality Director Bill Wiley's presentation addressed the question of whether our air quality in Maricopa County is improving. Not surprisingly, public perception holds that the air quality is getting worse. The reality, however, is a much more positive story (shocker): over the last thirty years there has been a significant improvement in air quality for most parameters. Challenges continue, however, as the area continues to grow in population and EPA continues to adjust downward the reference points – the National Ambient Air Quality Standards – particularly with regards to particulate matter (aka dust).
- ADEQ's new Deputy Director Misael Cabrera discussed the agency's process streamlining initiatives and the plans for implementing "lean" organization and management techniques. This effort has the potential to significantly increase efficiencies at ADEQ which should mean, among other things, faster, cheaper and better permits for the regulated community.
- Keynote Adam Hawkins of Resolution Copper discussed his company's copper mining project near Superior, Arizona. Did you know Superior (60 miles east of Phoenix) is home to the third largest undeveloped copper resource in the world? This project has the potential to create approximately 4,000 jobs right here in Arizona, and create a total economic impact of approximately \$1 billion every year for the mine's 40-year life. Now that is a real economic stimulus project. The engineering challenges (e.g. an ore body 7,000 feet underground) are surmountable; let's hope the federal government roadblocks are as well, for Arizona's sake.
- Mary Wesling with EPA Region 9 presented her always informative update on EPCRA and Clean Air Act compliance and enforcement, and

teamed up with Mike Ardito (EPA Region 9), Mark Howard (AZSERC) and Meredith Bond (MCLEPC) and offered reflections on 25 years of EPCRA.

- The always entertaining attorney Mitch Klein wowed a big crowd with his presentation on the realities of environmental litigation (it's not like the T.V. shows or movies, as you might have guessed).
- Morgan O'Connor with Xanterra Parks and Resorts discussed real world success stories in implementing pollution reduction initiatives at the Grand Canyon Railway, and presented cold, hard facts demonstrating the economic benefits of their sustainability initiatives. In just a few years, his company has achieved, for example, a 51% reduction in diesel usage, a 61% reduction in water usage; and an 11% reduction in electricity usage, and uses a locomotive that runs on waste vegetable oil!
- Marshall Trimble, Arizona's State Historian, entertained over lunch on Day 2 with stories of life in Arizona's copper mining towns, the wandering Gila, the sinking of Arizona's navy, and how Arizona's ephemeral waters led to the capture of German POWs.
- Lisa (Culbert of Layne Christensen) and the Factory performed all your favorite classic rock hits from the 60s and 70s and ended their set under a perfect Arizona April sunset.

You won't want to miss next year's extravaganza. Mark your calendars for the first week of April, 2013 for the 9<sup>th</sup> Annual Gatekeeper Regulatory Roundup, which will somehow, some way, top this year's event.

The Arizona Legislative Session is wrapping up as of this writing and several changes to Arizona's environmental laws are worth noting:

- S.B. 1289 reduces stormwater permitting burdens at construction sites that retain stormwater and meet certain other conditions.
- HB 2799 directs ADEQ to establish an "environmental stewardship program" to recognize companies "with a history of preventing environmental law violations" and to create "incentives for organizations going above and beyond environmental law requirements." This program is designed to replace the Performance Track program recently shuttered by EPA. A stakeholder process will be starting shortly if you are interested in helping develop this worthwhile program.
- SB 1287 amends the Aquifer Protection Program law to clarify the complex modification provisions, and exempt certain stormwater discharges from possible APP applicability.
- HB 2199 provides for an "environmental audit privilege" and is designed to encourage companies to conduct environmental audits by protecting the reports from disclosure to third parties or agencies under certain conditions. The law does not protect companies from liability for any environmental violations, or allow them to avoid penalties for those violations, as some critics of the bill have claimed, and also provides that the protection from disclosure may be lost if "appropriate efforts to achieve compliance with the law were not promptly initiated and pursued with reasonable diligence after the discovery of the noncompliance." The privilege also does not apply to any information required to be collected by a regulatory agency, or information obtained by a regulatory agency itself. Companies considering an audit should of course consult with counsel to understand the law's limitations and other available methods to conduct internal audits without creating an enforcement roadmap for regulators.

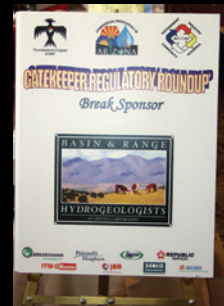
Finally, this summer will be busy with stakeholder meetings on our ongoing air quality challenges, as well as possible changes to the UST program. If you would like to get involved and need more information, contact Rep. Amanda Reeve at areeve@azleg.gov.

Michael C. Ford is an Environmental and Natural Resources Law Attorney with the Phoenix office of Polsinelli Shughart. His practice is focused primarily on regulatory compliance advice and enforcement defense. He can be reached at 602-650-2321, or by email at mford@polsinelli.com.



# EPAZ, THUNDERBIRD CHAPTER AHMP, AND AZSERC HOST ANNUAL 2012 GATEKEEPER REGULATORY ROUNDUP

The theme of the 2012 Gatekeeper Regulatory Roundup was "Protecting Arizona's Environment for the Next 100 Years". The well-attended conference provided regulatory updates, an opportunity to network with peers and share industry specific information. See Mike Ford's "Regulatory Developments" (opposite page) for a detailed report on the conference.



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