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ARIZONA

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*Regulatory Developments
by Michael C. Ford, Pg 12*

**COUNTY
AIR QUALITY
DIRECTORS**

**SPEAK ON
NONATTAINMENT
ISSUES Pg 4**

SPOTTY DISHES?

**IT MAY NOT BE YOUR
DISHWASHER'S FAULT**

*See It's All About Chemistry
by Dr. Larry Olson, Pg 10*

February / March 2011 Vol 9 No. 1

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Alliance Hosts:

Air Quality Luncheon

Guest Journal Staff

The Arizona Environmental Strategic Alliance, a non-profit public/private partnership to promote environmental leadership and mentoring, hosted an Air Quality Luncheon January 25th at the Grace Inn in Ahwatukee, Phoenix. The focus of the luncheon was to discuss the recent non-attainment air quality issues for PM10 and PM2.5. Over 70 environmental professionals from Maricopa and Pinal counties attended.

Speaking were Bill Wiley, Air Quality Director of Maricopa County, and Don Gabrielson, Air Quality Director of Pinal County. Ed Fox, Vice President and Chief Sustainability Officer of APS, moderated and led a question & answer session following the presentations.



Left to Right: Don Gabrielson, Pinal County Air Quality Director; Bill Wiley, Maricopa County Air Quality Director; Ed Fox, Vice President and Chief Sustainability Officer, APS

Presentation Highlights

Staff Notes

For your convenience, Journal guest staff have outlined a few highlights from the presentations — the following are our *guest staff notes*, not the director's written text. Refer to the respective directors for specific information. Both original presentation Powerpoints can be viewed on the Alliance website at www.azalliance.org.

Pinal County

Don Gabrielson, Pinal County Air Quality Director, spoke first, addressing the challenges facing Pinal County in developing State Implementation Plans (SIPs) to respond to pending nonattainment designations from the United States Environmental Protection Agency (USEPA) for particulate matter smaller than 10 microns (PM10) and particulate matter smaller than 2.5 microns (PM2.5). The USEPA sets forth National Ambient Air Quality Standards (NAAQS) and when monitoring data exceeds or violates these standards state and local agencies are required to formulate a SIP that explains how the area will be brought back into compliance.

Since Pinal County currently has five monitors that exceed the PM10 standard a SIP will have to be developed that includes an emission inventory, enforceable control strategies, justification for exceptional events, and a modeling exercise that shows the area can attain the standard in five years. Currently the PM10 standard allows three exceedances in three years, the fourth exceedance violates the standard. An exceedance is defined as a 24-hour average over 150 micrograms per cubic meter. The USEPA is considering changing the standard to be based on the 98th percentile of the data set collected and if the three year average of the 98th percentiles is over 65 micrograms per cubic meter the standard will be violated.

Pinal County has one violating PM2.5 monitor. Controls that have been implemented at feedlots near this monitor have reduced the observed concentrations and at the end of 2010 this monitor was close to showing attainment. In Pinal County the observed PM2.5 and PM10 concentrations share common origins, which is unconventional when compared to other locations that primarily point to the combustion of fossil fuels as the source for PM2.5.

Maricopa County

Bill Wiley, Maricopa County Air Quality Director, spoke next. Maricopa County is currently in nonattainment for two National Ambient Air Quality Standards (NAAQS), particulate matter smaller than 10 microns (PM10) and ozone (O3), and is coming close to nonattainment to a third standard, particulate matter smaller than 2.5 microns (PM2.5). Historically the County also had trouble meeting the carbon monoxide NAAQS, but no exceedances of the 8-hour carbon monoxide standard have been recorded since 2000. Unfortunately the PM10 has not fared as well. While the number of exceedance days have been reduced in the last three years (11 exceedance days in 2008, 7 exceedance days in 2009 and 2 exceedance days in 2010) the PM10 standard only allows for three exceedances in 3 years. Currently the County has one ozone monitor that exceeds the 8-hour ozone standard of 0.075 part per million (ppm), but

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the EPA is proposing to lower the standard in the range of 0.070 ppm to 0.060ppm. Depending on where the revised standard is set the County will have either several monitors or all its monitors exceeding the ozone standard. Open burning around the holidays in December and January resulted PM2.5 levels being recorded above the 24-hour PM2.5 NAAQS. Additionally EPA is considering lowering the annual PM2.5 standard. This in turns means that the "No Burn Days" that are routinely issued in the winter time are all the more important to heed.

The PM10 standard is currently a focal point due to recent actions taken by the EPA. Maricopa County was designated serious nonattainment for PM10 in 1995 by the EPA. In 2006 the area failed to meet the standard by the attainment deadline. In 2007 the EPA required the that a 3 year plan be submitted with 5% annual reductions (the 5% plan). In September of 2010 the EPA proposed to partially disapprove and approve this plan, which has the same consequences as a disapproval. The plan has been effective in that there have been no violations recorded during stagnant conditions since the plan was submitted in 2007. Local and State agencies are still debating with the USEPA on how to handle exceedances caused by high winds during this time period.

The Arizona Department of Environmental Quality (ADEQ) withdrew the 5% plan on January 25th. An ADEQ press release explained that "if the plan had not been withdrawn, EPA would have taken final action on Jan. 28, 2011, resulting in sanctions freezing regional transportation planning in Maricopa County. Unless resolved, disapproval could also impact the construction of new, large sources of dust within 18 months, and federal highway dollars after 24 months." The press release went on to state that in order "to avoid the imposition of long-term sanctions, ADEQ must submit an updated air quality plan for PM-10 to EPA before June 25, 2012."

In response local agencies will need to revise the emission inventory



More than 70 environmental professionals from Maricopa and Pinal counties attended the AQ Luncheon.

included in the plan to reflect the changes in the mix of sources since the downturn in the economy. Additional control measures may need to be implemented to reduce PM10 measures by 5% per year until the monitors demonstrate the area is meeting the PM10 NAAQS. The air quality modeling included in the plan that predicts the effectiveness of control measures will also need to be revised. Based on the USEPA partial disapproval of the plan agricultural Best Management Practices (BMPs) and related enforceability issues will have to be addressed. The efforts put forth in the revised plan will need to result in three years of clean data at all PM10 monitors in order to demonstrate attainment with the PM10 NAAQS.

Copies of the Director's Powerpoints are available at www.azalliance.org.



L to R: Hunter Lovins speaking with Dr. Nick Hild

ASU College of Technology Cohort Dinner

The College of Technology, ASU Polytechnic Campus, hosted its annual dinner for ETM Board Members, ETM Alumni, and student cohorts January 11th. Cohorts participate in the ETM online degree program and meet annually for a 3-day session in Arizona.

Guest speaker was Ms. Hunter Lovins, worldwide leader in sustainable practices. Her presentation focused on the business case for sustainability. Hunter Lovins has authored and co-authored numerous books, including *Brittle Power* (1982), *Energy Unbound* (1986), *Factor Four—Doubling Wealth*,



Halving Resource Use (1997), *Green Development* (1998), *Natural Capitalism* (1999), and hundreds of papers and articles. She was named as a Time magazine "Hero for the Planet" in 2000, and a Newsweek "Green Business Icon" in 2008. She is just coming out with a new book called *Climate Capitalism*. Hunter has consulted for governments and the private sector, briefing senior management at such groups as Interface, Mitsubishi, Bank of America, Royal Dutch/Shell Group, and numerous utility companies. She is the chief insurgent of the madrone project and was a founding Professor of Business at Presidio Graduate School.

Dr. Nick Hild, Professor/ETM Program, called the cohort dinner "a great opportunity to really tell the ETM story." For more information on the ASU ETM program contact Dr. Hild at DrNick@asu.edu.

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 March 14: Holbrook, AZ
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 March 23: Gallup, NM
 March 24: Flagstaff, AZ
 March 29-30: Kingman, AZ
 March 31-April 1: Yuma, AZ
 April 6-7: Glendale, AZ
 April 9: Mesa, AZ (ASU Polytechnic)
 April 20-21: Mesa, AZ (ASU Polytechnic)

* Please check our website for the latest dates and locations.

On-site classes for groups of more than 20 may be scheduled by contacting us with your group's needs.

Your Air Quality Permit may require opacity readings by a person certified in the proper use of EPA Method 9. Opacity training is recommended for air quality environmental consultants and environmental compliance personnel at construction sites and at any source of visible emissions.

Maricopa County area classes include a review of all Maricopa County Air Quality Department opacity standards by Al Brown, Certified Trainer for Comprehensive and Basic Dust Control Training.

To register or get more information:
poly.asu.edu/seminars
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JOURNAL OF Environmental Management

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MICHAEL C. FORD, ATTORNEY, POLSINELLI SHUGART

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From the Editor



Although environmental regulations affecting business and industry are typically our focus in the Journal, environmental regulations don't just affect us in the workplace. As this issue's cover photo suggests, regulations can have a significant impact on our daily home lives. In his column, "It's All About Chemistry, Spotty Dishes" (see page 10), Dr. Larry Olson discusses recent changes to dishwasher

detergent formulations and the resulting affect on cleaning quality.

Arizona's great spring weather coincides with many of our community environmental conferences and seminars. By the time you read this, EPAZ, AHMP, and AZSERC will have just completed the 7th Annual Gatekeeper Regulatory Conference, SAEMS will have completed its RCRA: Into the Next Decade seminar. Look for photos & information on these events in the upcoming April/May issue of the Journal.

The Journal is now in our 9th year of publication! Thank you for being a subscriber, and thank you to all of our advertisers, columnists, & contributors!

Sincerely,

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

Journal of Environmental Management Arizona
 EDITORIAL Publisher & Editor: James Thrush, M.S. Env. Mgt., jimthrush@cox.net or 480-422-4430. SUBSCRIBE: ehshomepage.com or 480-422-4430. RATES FREE to qualified EHS Professionals, others call. MAILING ADDRESS JEMA, 3145 E. Chandler Blvd, Suite 110-641 Phx, AZ 85048. ADVERTISING 480-422-4430 x42. Published 6 times/year. Copyright © 2010 by JEMA. All rights reserved. LEGAL DISCLAIMER: Information presented in JEMA originates from sources presumed to be accurate and complete. Due to the rapidly changing nature of regulations and the law and our reliance on information provided by various sources, we make no warranty or guarantee concerning the accuracy or reliability of the content of JEMA. Readers are encouraged to contact authors, agencies, and advertisers directly for verification/clification. Content for informational purposes only, and should not be considered legal or professional advice. Consult your legal counsel or environmental consultants for advice. WARNING: Serious legal, environmental, and/or safety consequences can result from non-compliance with environmental and safety regulations and standard safety, environmental, and professional practices.



Sustainability and Sustainable Development

Nicholas R. Hild, PhD.

PART I: Mensa and Black Swans

Back in the 1970's, the Mensa Society of heady I.Q. thinkers published results of studies they had conducted which showed that some really intelligent thinkers were very adept at predicting outcomes when they knew exactly which variables to use in their models. That is, when they could predict what they knew they didn't know, they could develop scenarios which generally led to a positive outcome but, what they weren't so adept at was... "...predicting (*knowing*) what they *didn't know* they didn't know."

While that sounds convoluted, consider a few major events which have occurred just in the past decade, that no one predicted—the astonishing success of Google, 9/11, the crash of the housing market (derivatives), and the 2007 stock market '*crash*'—being a few that were anticipated by no one. These 'events' occurred largely because no one understood what they *didn't* know (before the event happened). But, mostly no one even understood that they needed to ask: *what do we not know that we don't know?*

It is clear that we seem to do pretty well at planning for future events if we can predict what variables to plug into our models. That is, when we can predict what we don't know and operate on those variables, we tend to have reasonably good outcomes. But operating on what we *know* we *don't* know begs the question: *how do we plan for the things that we don't know we don't know?*

The 1970's Mensa Society's illuminating revelation that people are not good at seeing the future, didn't seem to have much impact on professional planners who's responsibility it is to predict where populations will grow and what resources will be necessary to sustain our planet's resources for future generations—especially, here in the arid southwest— It didn't have much impact on government *planners* at all, perhaps because Mensa's members have some of the highest IQs on the planet while our government's politicians whose job it is to plan programs that sustain our future, on average, have never

been thought to have a particularly high IQ anyway, collectively *or* individually.

But, still, the application of the theory that thinkers and planners don't generally do a good job of finding out what we don't know we don't know is worth looking into—if only to further the 'science' of prognostication. Or, in our case, the not-so-scientific science of environmental planning.

Fast forward to 2007, to the publication of a book by Nassim Taleb titled *The Black Swan*, which has recently become somewhat of a cult classic for internet bloggers and college students alike. Not knowing what we don't know we *don't* know, is precisely what leads to events that Taleb calls, Black Swan events— events that have outcomes of earth-shattering consequences, depending upon your definition of '*earth shattering*.'

In *The Black Swan*, Taleb notes that the process of planning for any event or activity requires knowing what we assume we don't know—or at least being able to predict what it is we need to know. We set out a hypothesis, make assumptions about variables that we know we don't know, then conduct research to determine what the unknowns are that we thought we would find solutions for when we predicted what would be found. Those are the variables we *knew* we didn't have answers for.

But *NOT knowing what we don't know we don't know*, leads to what Taleb calls, a Black Swan (event). And, he says, such 'events' underlie almost everything about our world, from the rise of religions to events in our own personal lives; indeed, "*Black Swans are everywhere.*"

Taleb defines a Black Swan (event) as a highly improbable event (i.e. it is why it correlates with Mensa's not knowing what we don't know we *don't* know), with three principal characteristics: First, such events are unpredictable (before they happen); Second, such events have a massive impact (after it happens); and, third, after it happens, we concoct an explanation that makes it appear less random and more predictable, than it was. That, of course, is corollary to saying, "...*if we had only known what we didn't know we didn't know, we could have predicted this (event happening)!*"

Taleb's Black Swans are earth-shattering but it is likely we can find some *Environmental* Black Swans right here in Arizona—not earth-shattering perhaps, but certainly events which meet Taleb's three criteria—if we just take a look back at some major developments where the environment has been negatively impacted—lets call them Arizona Black Swans.

In Part II of the next issue of the Journal, it will become clear that we still have time to head off an Arizona (Environmental) Black Swan in the making—if we only think about *what we know we don't know we don't know*—and, if we truly are concerned about the future of Arizona's children's, children's, children.

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) has a number of great student events coming up! At ASU the Phoenix Chapter is participating in the 2011 Student/Professional night on March 3 sponsored by the GeoClub as well as the AEG/AHS Student Night April 12th. We all had a great time last year and are looking to meeting with students again and answering their questions.

AHS members will be judging water related science projects at both the Southern Regional Arizona Science and Engineering Fair in Tucson March 21-25 and the Arizona Science and Engineering Fair in Phoenix April 11-13. Both these events are aimed at children in grades K-12. Cash prizes are awarded to top winners and the students are invited to show their project at AHS' Annual Symposium.

We are also now accepting applications for the AHS annual scholarships, the Herman Bouwer intern-scholarship, the Halpenney intern-scholarship, and the Flagstaff Chapter intern-scholarship. Scholarship applications are all due April 30, but the intern-scholarship deadline varies among the individual chapters – please check the AHS web site at <http://www.azhydrosoc.org/internships.html> for current dates.

Christie O'Day
Executive Director



www.eia-az.org

Now is the time of year to renew your EIA National/Local memberships. Options are provided so you may join as an individual or a corporate sponsor. As a corporate sponsor your company information is included in the video presentations and highlighted at each of our events. You do not need to be a member to attend our free seminars on PM 10 Dust Control and Asbestos Regulatory Topics. We will be hosting our first 2011 dinner meeting February 24th at the Xona Resort located at 7677 E. Princess, Scottsdale, Arizona. Please visit our website for additional details.

We often neglect to acknowledge the local regulators that work diligently towards making our State a safer place to live and who volunteer their time to participate in the EIA's free seminars. The EIA expresses our deepest thanks to the Maricopa County Air Quality Division, State Air Quality Division, the State Occupational Safety and Health Administration for all you do! Please visit our web site at <http://www.eia-az.org> or call 602-437-3737 ext. 123 for information on all upcoming events sponsored by EIA-AZ and for membership and sponsor opportunities.

Vicky Aviles
Past President



www.awma-gcs.com

AWMA Grand Canyon Section (AWMA-GCS) held a special meeting at the EUEC Energy and Environmental Conference on January 31st. A panel of national air quality specialists from Trinity Consultants spoke about greenhouse gas permitting and GHG BACT and provided an excellent opportunity for Q&A. Special thanks to Russell Bailey, Brian Burdorf, Rich Pandullo, Maren Seibold, and Joe Sullivan from Trinity for speaking and to EUEC for providing space for this event.

On March 3rd, AWMA-GCS and the State Bar of Arizona's Environmental and Natural Resources Section will be holding their annual joint meeting at the law offices of Quarles & Brady. Roger Ferland's presentation following the reception is sure to be dynamic and thought-provoking. Please check our website for additional meeting details and for membership information.

Also, feel free to contact Darcy Anderson at littleblue123@cox.net or 520-360-2641 with questions or suggestions for meeting topics.

Darcy J. Anderson
Chair



www.valleyforward.org

ELEVATING THE DIALOGUE, FOSTERING INFORMED DECISIONS

Energy is a hot topic around the world and in Arizona as our state's economy shifts to renewables and green technologies. A number of factors are aligning to support the cause, including federal, state and utility incentives, the growing cost of fossil fuels and an increased concern for ecological issues.

Clean energy contributes to both economic growth and environmental quality. Solar is the cleanest, most abundant renewable energy source available. The challenge is scaling up production and distribution to drive down price. We're nearing a tipping point where increasing demands and falling prices will ensure renewable energy is not just a green fad but an important economic strategy that could lead us out of a recession to a brighter future. By elevating the dialogue and fostering informed, objective decisions, we can create the right incentives and policies to make that happen.

Valley Forward Association just published "Arizona's Guide to Electrical Energy Choices," a resource book and online tool that provides impartial, unbiased facts and background. The goal is to educate ourselves, the general public and opinion leaders about this complicated topic to ensure better choices about our energy future. To preview the guide, visit www.valleyforward.org.

Diane Brossart
President



www.AzBAS.net

2011 is already bringing exciting changes to Arizona Businesses Advancing Sustainability (AzBAS). After a year of steady growth the association is now in a position to engage a part time Executive Director. Tasked with advancing the vision of the association—the Executive Director will work with member companies to provide additional tools and resources to help member companies implement strong sustainability programs as well as to assist in promoting and expand business interest and engagement in sustainability across Arizona.

The Association will host its Annual General Meeting March 21st where the new Executive Director will be introduced and voting for the Executive Team will take place. Ping has offered their services as the event host and will include a tour for attendees of their facility, including an in-depth introduction to their sustainability practices.

Guests are welcome to join us to learn more — please contact AzBAS via the contact form on our website www.azbas.net for more information.

Richard Condit
Chair



AHMP Thunderbird

www.thunderbirdchmm.org

Service is a large part of the AHMP Thunderbird Chapter's mission, and one of our most important projects is the award of scholarships to Arizona students. The selection process has never been more painful than it was this year, with a very strong applicant pool.

Andrea Corral, a University of Arizona Doctoral student in Environmental Engineering, is a Research Assistant in the Water Desalinization Group. She hopes to translate her skills into improved resource management in challenged countries such as her native Ecuador. Andrea received a \$1,000 scholarship.

Travis Borillo-Hunter is a University of Arizona undergraduate majoring in Environmental Science with a minor in Chemistry and Hydrology. Travis hopes to earn a Master's in Hydrology and use his skills in the remediation of contaminated groundwater. He received a scholarship for \$1,500.

Sean Wilson is an Arizona State University undergraduate studying Water Resources and Environmental Engineering. His area of research is the use of natural recharge filtration mechanisms as an alternative to carbon adsorption. Sean received a scholarship for \$2,500.

Please join us in congratulating our scholarship winners!

Jeff Page
CHMM
Board Member



www.SAEMS.org

The speaker at the SAEMS January 26 meeting was Dr. Travis Huxman, the Director of Biosphere 2. His presentation illustrated how the uniquely controlled environment provides invaluable

opportunities for research, outreach and education about the Earth; its complicated systems and its uncertain future.

Entering our 25th year, SAEMS faces the challenge of the current economic climate while continuing to promote a better understanding of environmental issues through education and outreach in our community. Faced with rising tuition at the University of Arizona, SAEMS is currently not able to provide two full undergraduate and graduate scholarships as in previous years. However, SAEMS will use available funds for smaller awards that will not be restricted to tuition, books and fees. In 2011, SAEMS has already helped to fund the Southern Arizona Regional Science and Engineering Fair to be held in March at the Tucson Convention Center and Tucson Clean & Beautiful's "E Pluribus Recycles!" educational plays for grade schools.

We are in "seminar season," hosting the Regulatory Roundup February 23 and the annual RCRA Seminar May 12. The first Adopt-a-Highway cleanup was February 12, the next one is scheduled for April 9, and a Wildcat Dump Cleanup will be scheduled in March.



Ken Asch
President



ESH for
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www.seshaonline.org

We are pleased to announce that the First Quarterly Meeting of the year for the ESHA - AZ Chapter will be held on March 3rd from 2:00 pm to 5:00 pm. The session will be held at Intel Corporation at the following address - 4500 South Dobson Road, Chandler AZ - 85284 (OC2 Building).

Mike Sherer from Sherer Consulting Services will give a presentation detailing the requirements in the Final Ruling on Greenhouse Gas Regulations. Other topics include Environmental Stewardship, Intellectual Property Protection and Maximizing Revenue from Recovery of Semiconductor Manufacturing Materials. We hope you are able to join us for Quarterly Meeting this March. Please contact me at 480-715-4138 or Vijaya.geetha.ks@intel.com if you would like to attend the conference. Space is limited, so please register soon to reserve your spot!



Vijaya Geetha KS
President



www.EPAZ.org

At our January luncheon, Tom McMahon from the Arizona Game and Fish Department gave a presentation on aquatic invasive species in Arizona, such as Zebra and Quabba Mussels. These non-native flora and fauna present a significant hazard to native species. In addition, control measures result in extra cost to all of us who use the water and power that are associated with our lakes, rivers, and canals.

February was our annual Gatekeeper Regulatory Roundup held in conjunction with the Thunderbird

Chapter of AHMP and the Arizona Emergency Response Commission. This year included three separate program tracks on each day. EPAZ awarded scholarships totaling \$8,000 to students pursuing careers in environmental services. (See the article in the upcoming April/May issue of the Journal for more details.)

EPAZ normally holds monthly luncheon meetings on the 2nd Thursday of the month from 11:30 am to 1:00 pm at the SRP PERA Club. For details and reservations, please go to our website at www.epaz.org. EPAZ also gathers on the last Wednesday of the month for a casual cocktail mixer at various locations throughout the valley. Visit our website to find the location of our next mixer or contact me at (480) 829-0457 for more information.



Mannie
Carpenter
President

American Society of Safety Engineers

Since the new law going into place on the approved use of medical marijuana Southern Arizona ASSE is hosting an educational seminar on the subject March 15.

Speakers include:

Joseph Kroeger from Snell and Wilmer will speak on the aspects of the new law as well as the right of the employer vs. the rights of employee.

Sonja Hoppe, Southwest Labs will discuss drug testing aspects and how they will relate to new law.

Captain Quinn McCarthy from the Tucson Police Department will talk about signs/symptoms of impairment and detecting use.

Tuesday, March 15, 2011

8:00 - Noon

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The Alliance got a fast start on 2011, hosting the well-attended Air Quality Luncheon in Ahwatukee on January 25th. Over 70 attendees heard guest speakers Bill Wiley, Air Quality Director of Maricopa County, and Don Gabrielson, Air Quality Director of Pinal County. Ed Fox, Vice President and Chief Sustainability Officer at APS moderated and led a Q&A session following the presentations on the recent PM10 and PM2.5 Non-Attainment issues. (See article on page 4 of this issue of the Journal for more information).



Dan Casiraro, Left, Presents the
Alliance Certificate of Appreciation to
Matt Conway for Service as 2010 Chair

Members elected a new board of Directors for 2011: Chair: Dan Casiraro, SRP; Vice Chair: Cameron Flower, Kitchell; Treasurer: Larry Person, City of Scottsdale; President: Jim Thrush. The Alliance Advisory Council also elected two Co-Chairs for 2011: Beverly Westgaard, AESA and Kale Walch, Pinal County. We offer our thanks and appreciation to Matt Conway, PING, outgoing Alliance Chair, for his hard work & leadership in 2010!

Mentoring and promoting environmental leadership continue to be our focus in the upcoming year.

Contact the Alliance at 480-422-7392 for information.

Matt Conway
Chair



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Larry Olson, PhD.

It's All About Chemistry

Spotty Dishes?

Have you noticed your dishes looking a little scruffy lately when they come out of the dishwasher? Maybe they even look worse than when you put them in? Do spotty, not sparkling glasses, discoloration on pots and pans, baked on stains that used to come off but don't now sound familiar? Like me, you might have thought that it was time for a new dishwasher.

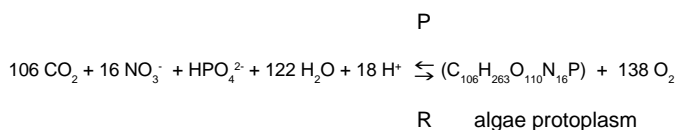
Well it is not your imagination and you are not alone in being perplexed over a problem that seemingly just happened overnight. The issue isn't your dishwasher but the detergent you put into it. Starting this past summer, dishwasher detergent manufacturers changed their formulations by reducing phosphate content to no more than 0.5% from as high as 9% in old products. This was done in response to 18 different states that have passed laws outlawing the sale of phosphorus containing dishwasher detergents for household use. Arizona is not one of those states, but it doesn't matter. Manufacturers who sell to nationwide chains can't afford to differentiate their product for each state, so the American Cleaning Institute went to the states that were contemplating new phosphorus bans and asked them to conform to the Washington state law. In return, they agreed to make their whole line of dishwasher detergents conform to the new standards.

You might be thinking that phosphates have already been banned from detergents, but that was just laundry products, not dishwasher detergents. By 1960 almost all laundry detergents in the U.S. contained 30-50% phosphate builders which were used to keep multivalent ions such as Ca^{2+} and Mg^{2+} in solution. Over 2 million tons of phosphorus were used just for detergents in 1983. Unfortunately,

much of this phosphate load passes through wastewater treatment plants and ends up in rivers and lakes where it can stimulate algae growth. Algae are photosynthetic plants whose growth is limited by the least available nutrient in water. The process can be modeled by the equation below and the C:N:P ratio of 106:16:1 is called the Redfield ratio. As long as production (P) and respiration (R) are matched, elements just cycle back and forth between living and inorganic forms. But plant growth is controlled by the availability of the limiting nutrient (Liebig's Law of the Minimum) and even though algae contain much more carbon and nitrogen, it is usually the phosphorus that is growth limiting.



Photographer: Carlos Paes. Courtesy of Wikimedia.org



When $\text{P} \gg \text{R}$, we get "algal blooms" that can turn lakes green, clog water intakes, and change odor and taste. As the algae die, the decomposition reactions turn the water anoxic which can affect aquatic growth and produce hydrogen sulfide. The whole process of eutrophication is greatly accelerated by man-made sources of nutrients that throw the cycle shown above out of whack.

As far back as 1965, the National Academy of Sciences and the National Research Council began to study the causes of eutrophication and recommended removing phosphates from detergents. It took decades and many state and local laws, but the industry finally voluntarily agreed to remove phosphates from detergents because it was too difficult to make different products for different states. However, dishwasher detergent was exempted because its use wasn't widespread at the time.

It turns out that finding suitable replacements for phosphates is harder in a dishwasher than a clothes washer. Because dishwashers lack an agitator, which helps the soap to break up dirt and grease and keep it suspended, the role of phosphates has been critical to performance. The new products have not been well received by many consumers and already companies are seeking to improve them.

In the meantime, you hear complaints such as: "I'm angry at the people who decided that phosphate was growing algae. I'm not sure I believe that." (NPR radio story, 12/15/2010) or "My dishes are dirtier than before they were washed." (Cascade consumer review website) or "If I'm using more water and detergent, is that saving anything?" (N.Y. Times, 9/19/2010).

Like low flow showers, progress in the name of the environment isn't always easy.

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 env. mgmt. He can be reached at 480-727-1499, or by email at Larry.Olson@asu.edu

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Ideas For Your Next Hole Sponsorship

ATC recently sponsored a hole at a golf tournament which turned out to be very productive, mostly because we were the only sponsor that set up an activity at any of the holes. Every other sponsor limited their valuable marketing dollars to a flimsy foam-board sign at a tee-box. Can you imagine? This was an unusual case, but it is a good example of how opportunities to connect with potential clients can be squandered. For this edition, I thought I'd share what we did and some other ideas we considered.

In deciding which activity we would incorporate, I thought about ways we could get our name, logo and services in view as much as possible and how I could get contact information from participants to follow up. We used ATC hard hats as tee-box markers and hung our company banner from a shade canopy; pretty standard stuff. Being a golfer myself, I know golfers love games. So, we gave each group 12 wiffle-balls to split amongst themselves and placed them 20-30 feet from our banner. Every ball they could strike into our banner won a sleeve of ATC logo balls. Or, they could try to pitch into a company duffle-bag about 30 feet away and take it home. It was very easy, fun and effective. After the golfers hit, I gathered them for a quick picture, got business cards and emailed them the photo that night with a short snippet about our company. It was a great way to gather cards and touch each participant an additional time. Other than the cost of the balls and the duffle bags, it was a low cost way to stand out.

Here are some other low/no cost ideas we considered:

- Put your company banner near the landing zone and offer a prize if anyone hits it.
- Push the foam-board sign (always provided) flush against the ground and have players hit/putt into it, similar to the way we used our company banner.
- Use a few croquet wickets as a putting course and have teams "putt through" while they wait. Whoever does it fastest or in the fewest strokes wins a prize.
- Have a "longest drive" contest using marshmallows or cotton balls.
- See who can balance a logo-tee on their club face the longest.
- Offer a prize if golfers can hit the fairway using a left-handed club (or right-handed for a lefty).
- Wagers against each shot work well. Hand out prizes for best/worst shot or landing in a particular area.

I've never seen any tournament where you were restricted from hosting some sort of activity at a hole you sponsor, so take advantage and use it as a way to set yourself apart and do something memorable. Interact with participants and get the most out of the event. Know the hole, distance, pin placement, preferred club, and hazards and provide advice to the golfers as they arrive and prepare to tee off. Dress nicely, have a winning attitude, introduce yourself and hand out your business card!



Joe Holmes is the Regional Manager of Business Development at ATC Associates. He can be reached at joe.holmes@atcassociates.com.

Joe C. Holmes



Michael C. Ford, Attorney

Regulatory Developments

Brownfields Developers Beware!

A recent decision from a federal district court denied “bona fide prospective purchaser”¹ protection from CERCLA liability for a purchaser of contaminated property. The *Ashley II*² decision is one of the first to discuss the bona fide prospective purchasers (BFPP) defense in detail. Those involved in commercial property transactions - particularly developers, investors, lenders, and consultants - should heed the lessons of *Ashley II* in their projects where BFPP protection is a deal component.

BFPP Background

The Small Business Liability Relief and Brownfields Revitalization Act of 2002³ provided liability defenses under CERCLA for landowners who meet certain statutory criteria, including landowners who qualify for BFPP status. The BFPP defense requires the purchaser to show:

1. All disposals of hazardous substances occurred prior to the purchaser's acquisition of the property
2. It undertook all appropriate inquiries prior to acquisition (typically met by conducting a Phase I Site Assessment)
3. It provided all legally required notices of any release of a hazardous substance after acquisition
4. It exercised appropriate care with regard to hazardous substances found at the facility by taking reasonable steps to stop any continuing release, prevent any threatened future release, and prevent or limit human, environmental, or natural resource exposure to previously released hazardous substances
5. It provided full cooperation, assistance, and access to persons authorized to conduct response actions or natural resource restoration
6. It complied with all land use restrictions and did not impede the effectiveness of any institutional controls at the property
7. It complied with information requests and administrative subpoenas
8. It is not a PRP, is not affiliated with a PRP through a family, contractual, corporate, or financial relationship, and is not the result of a reorganization of a business entity that was a PRP

In the *Ashley II* decision, the court found that Ashley had failed to meet several elements of the defense and, therefore, was liable for a portion of the cleanup costs at issue.

Ashley II Decision

In *Ashley II*, an experienced brownfields developer (Ashley) purchased several parcels of a contaminated site and undertook certain demolition activities to prepare the site for redevelopment while it worked on a cleanup plan with the EPA. Ashley offered its sellers complete indemnification from environmental liability. To oversee the environmental aspects of all of the parcels of land comprising the project, Ashley retained the services of an environmental engineer and conducted a Phase I Environmental Site Assessment prior to its acquisition of the site. Ashley then brought a cost recovery action against other potentially liable parties to recover its costs incurred to remediate the historical contamination. In response, the defendant brought a CERCLA contribution claim against Ashley, and Ashley asserted it met the BFPP defense.

The court concluded that Ashley failed to meet its burden of proving several of the elements of the BFPP defense. Specifically, the court concluded the following:

1. It was likely the disposal of hazardous substances occurred after Ashley's acquisition
2. Ashley failed to exercise appropriate care with respect to hazardous substances
3. Ashley was affiliated with the PRP sellers

Ashley II's Phase I had identified sumps containing hazardous substances at the site as recognized environmental conditions (RECs). After closing, Ashley demolished all of the above-ground structures on the site, but failed to clean out and fill in the sumps, thus leaving them exposed to the elements, and possibly allowing hazardous substances to escape from the sumps due to cracks in the structures. While Ashley eventually tested, cleaned, and filled the sumps, it did so more than two years after the sumps were first identified as RECs and the court concluded this was too late to prevent possible releases. Ashley also failed to prevent a debris pile from accumulating on the site, investigate the contents of the debris pile, and remove the debris pile for over a year. The court concluded Ashley had not exercised “appropriate care” regarding the sumps or debris pile.

As yet another fatal error, the court found that Ashley's affiliation with former owners precluded the application of the BFPP defense. Ashley released and indemnified them from environmental liability for contamination at the site, and attempted to persuade EPA not to take enforcement action against these former owners. The court concluded that this “affiliation” precluded application of the BFPP defense. The court's reasoning here is not clear, but suggests purchasers indemnifying sellers for all environmental liability forfeit BFPP protection. Obviously, this issue should be carefully considered when drafting purchase agreements.

The court held Ashley liable for a five percent share of the cleanup costs.

Why This is Important

While the Brownfields Amendments provided new incentives for Brownfields cleanup and reuse, the precise parameters of the BFPP defense were left ill-defined. The court's decision in *Ashley II* confirms that obtaining a Phase I alone may not be enough when RECs are identified: pro-active-measures to address issues may be required, depending on the circumstances. Prospective purchasers – as well as current property owners – should bear in mind that while BFPP status may appear relatively easy to obtain in the first place, if RECs are identified in the Phase I, this may raise additional uncertainty as to what further measures may be required to establish the BFPP defense. Courts will likely continue to scrutinize each and every element of the BFPP defense, which presents myriad opportunities for loss of protection.

Footnotes:

- 1 42 U.S.C. § 9601(40).
- 2 *Ashley II of Charleston, LLC v. PCS Nitrogen, Inc.*, No. 2:04-cv-2782-MBS, 2010 WL 4025885 (D.S.C. Oct. 13, 2010) (“*Ashley II*”).
- 3 Pub. L. No. 107-118, 115 stat. 2356.

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. Check out Mike's EMTV Channel videos on www.environmentalmanagement.tv!

Special thanks to my colleague Tiffany Anderson for her assistance with this article!

News Briefs

Sav-On Plating of Arizona, Inc. to Pay \$60,000 Penalty to Resolve Haz Waste Violations

❖ ADEQ and the Arizona Attorney General's Office announced recently that Sav-On Plating of Arizona, Inc. will pay a \$60,000 penalty as part of a consent judgment entered in Maricopa County Superior Court for hazardous waste violations at its South Phoenix plating facility. The company, located at 17 W. Watkins Road, was cited for a total of 11 violations following an ADEQ inspection in February 2009. During that inspection, liquid containing chromium was observed seeping from a corroded tank and pooling on the floor.

The violations against Sav-On Plating included disposal of hazardous waste without a permit, having an open container of hazardous waste, failure to have a contingency plan, improper storage of universal waste lamps and failure to adequately mark universal waste.

The settlement with Sav-On Plating brings to 11 the number of electroplating facilities in Arizona brought into compliance with hazardous-waste rules under ADEQ's "Plating Initiative."

ADEQ launched the Plating Initiative in 2008 after facility inspections beginning in 2004 determined that many facilities were not in compliance with the Arizona

Hazardous Waste Act, which regulates hazardous waste in the state.

"Their unlawful management of hazardous waste put employees and the community at risk but the company has stepped up and improved the way it does business," ADEQ Acting Director Henry Darwin said.

"Any company handling hazardous waste needs to rigorously comply with state standards to protect the health of our citizens and our environment," Attorney General Tom Horne said.

The consent judgment is subject to court approval.

Simula Inc., Owned by BAE Systems Aerospace & Defense Group, Inc. to Pay \$40,000 Penalty to Resolve Haz Waste Violations

❖ ADEQ and the Arizona Attorney General's Office announced recently that a South Phoenix-based manufacturer has agreed to pay a \$40,000 penalty under a consent judgment for hazardous waste violations.

Simula Inc., currently owned by BAE Systems Aerospace & Defense Group, Inc., was cited for 11 violations including improper storage of hazardous waste in unclosed containers, storage of hazardous waste without a permit and in improperly marked containers, and failing to submit signed manifests for shipment of hazardous waste. The company is located at 7822 S. 46th Street in Phoenix.

"The improper management of hazardous waste puts employees and the community at risk. BAE has since improved its business practices and we hope this settlement is a new beginning," ADEQ Acting Director Henry Darwin said.

"Any company handling hazardous waste needs to rigorously comply with state standards to protect the health of our citizens and our environment," Attorney General Tom Horne said.

The consent judgment is subject to court approval.

EPA to Develop Regulation for Perchlorate and Toxic Chemicals in Drinking Water

❖ U.S. EPA Administrator Lisa P. Jackson announced recently the agency's decision to move forward with the development of a regulation for perchlorate to protect Americans from any potential health impacts, while also continuing to take steps to ensure the quality of the water they drink. The decision to undertake a first-ever national standard for perchlorate reverses a decision made by the previous administration and comes after Administrator Jackson ordered EPA scientists to undertake a thorough review of the emerging science of perchlorate. Perchlorate is both a naturally occurring and man-made chemical, and

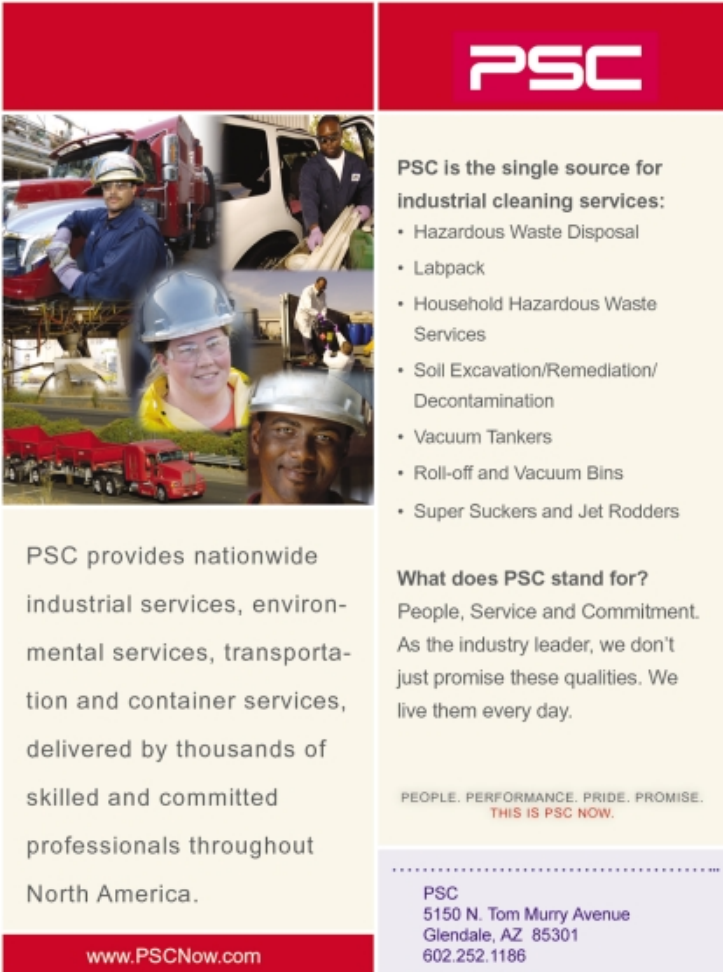
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scientific research indicates that it may impact the normal function of the thyroid, which produces important developmental hormones. Thyroid hormones are critical to the normal development and growth of fetuses, infants and children. Based on this potential concern, EPA will move forward with proposing a formal rule. This process will include receiving input from key stakeholders as well as submitting any formal rule to a public comment process.

In a separate action, the agency is also moving towards establishing a drinking water standard to address a group of up to 16 toxic chemicals that may pose risks to human health. As part of the Drinking Water Strategy laid out by Administrator Jackson in 2010, EPA committed to addressing contaminants as a group rather than one at a time so that enhancement of drinking water protection can be achieved cost effectively. Today's action delivers on the promise to strengthen public health protection from contaminants in drinking water.

"Clean water is critical to the health and prosperity of every American community and a fundamental concern to every American family. EPA is hard at work on innovative ways to improve protections for the water we drink and give to our children, and the development of these improved standards is an important step forward," said EPA Administrator Lisa P. Jackson. "Our decisions are based on extensive review of the best available science and the health needs of the American people."

EPA's New Proposal for Four Corners Power Plant Cuts More NOx Emissions

❖ Recently the U.S. EPA announced a supplemental proposal to reduce emissions from the Four Corners Power Plant. The new proposal will reduce nitrogen oxides (NOx) emissions from approximately 45,000 tons per year to 5,800 tons per year, 3,200 tons less than EPA's initial proposal. The proposal will also work to protect public health in the area by ensuring residents have cleaner air with fewer harmful pollutants.

This action follows EPA's initial October proposal to require pollution controls at the Four Corners Power Plant. In response to that proposal, Arizona Public Service put forward an alternative requiring plant operators to install Selective Catalytic Reduction (SCR) on two of the five coal-fired boilers and shut down the three older ones. SCR is the most stringent pollution control technology available for this type of facility.

"The new proposal controls emissions better, while costing less and preserving jobs," said Jared Blumenfeld, EPA's Regional Administrator for the Pacific Southwest. "This plant is the nation's largest source of nitrogen oxides. By reducing its emissions by 87% - rather than our initial proposal of 80% - we will all be able to see the results and breathe cleaner, healthier air."


Four Corners Power Plant and the Navajo Mine which supplies its coal, employ roughly 1000 people, 75% of whom are Native American. Both facilities have pledged "No Layoffs" if Units 1-3 are closed.

Today's proposal would reduce visibility impact from Four Corners Power Plant by an average 72% at the national parks and wilderness areas. Every year over 280 million people visit our nation's most treasured parks and wilderness areas. Yet, many visitors aren't able to see the spectacular vistas because of the veil of white or brown haze that hangs in the air, reducing visibility and dulling the natural beauty.

EPA is requesting comment on the proposal in addition to the October 2010 proposal by May 2, 2011. Members of the public in the Four Corners area will have four opportunities to attend open houses and public hearings during the week of March 28, 2011. For additional information on the proposed rulemaking and opportunities to provide input, please go to: <http://www.epa.gov/region9/air/navajo/>

Maricopa County AQ Dept: \$1 Million Enforcement Settlement agreement with Fisher Sand and Gravel Co.

❖ The Maricopa County Air Quality Department announced recently a \$1 million enforcement settlement agreement with Fisher Sand and Gravel Co. The agreement



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News Briefs

Continued From previous page

stipulates a portion of the enforcement fines will be invested into the community through air quality outreach and education.

The department found Fisher Sand and Gravel Co., located at 3826 S. 28th Street in Phoenix, to be in violation of multiple air pollution laws over a 2 ½ year period from 2007 to 2010. The announcement of a settlement agreement is the result of a mediation involving substantial efforts by the Air Quality Department and the Maricopa County Attorney's Office.

"Our goal as an agency is to keep the air clean before an air pollution violation occurs," explains Air Quality Department Director Bill Wiley. "But when we see significant violations of our air quality regulation we will hold polluters accountable for their actions."

"This is a significant milestone for the residents and business owners in the area," states District 5 Maricopa County Board of Supervisor Mary Rose Wilcox. "I am pleased to see a resolution to this case and am happy to know the money will expand our clean air outreach and education efforts. This demonstrates our commitment to protecting our neighbors from air pollution problems in Maricopa County."

In addition to a fine of \$650,000 which will go to the department's air quality fund, the settlement agreement requires Fisher to contribute \$350,000 to develop and implement a public awareness program regarding air quality. The department will implement the outreach initiative(s) starting in 2011. "We feel it's important to put immediate focus on the neighborhoods most impacted by the violations," explains Wilcox.

The Air Quality Department will continue to monitor the facility for compliance with air quality regulations. Residents and business owners are encouraged to contact the department if they detect an air quality problem within the county either by phone (602) 372-2703 or via the web www.maricopa.gov/aq under the Contact us, Report a Violation tab.

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