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SUSTAINABLE RETIREMENT

AN INTERVIEW WITH
DR. NICHOLAS R. HILD, PhD
PG 6

February / March 2012 Vol 10 No. 1

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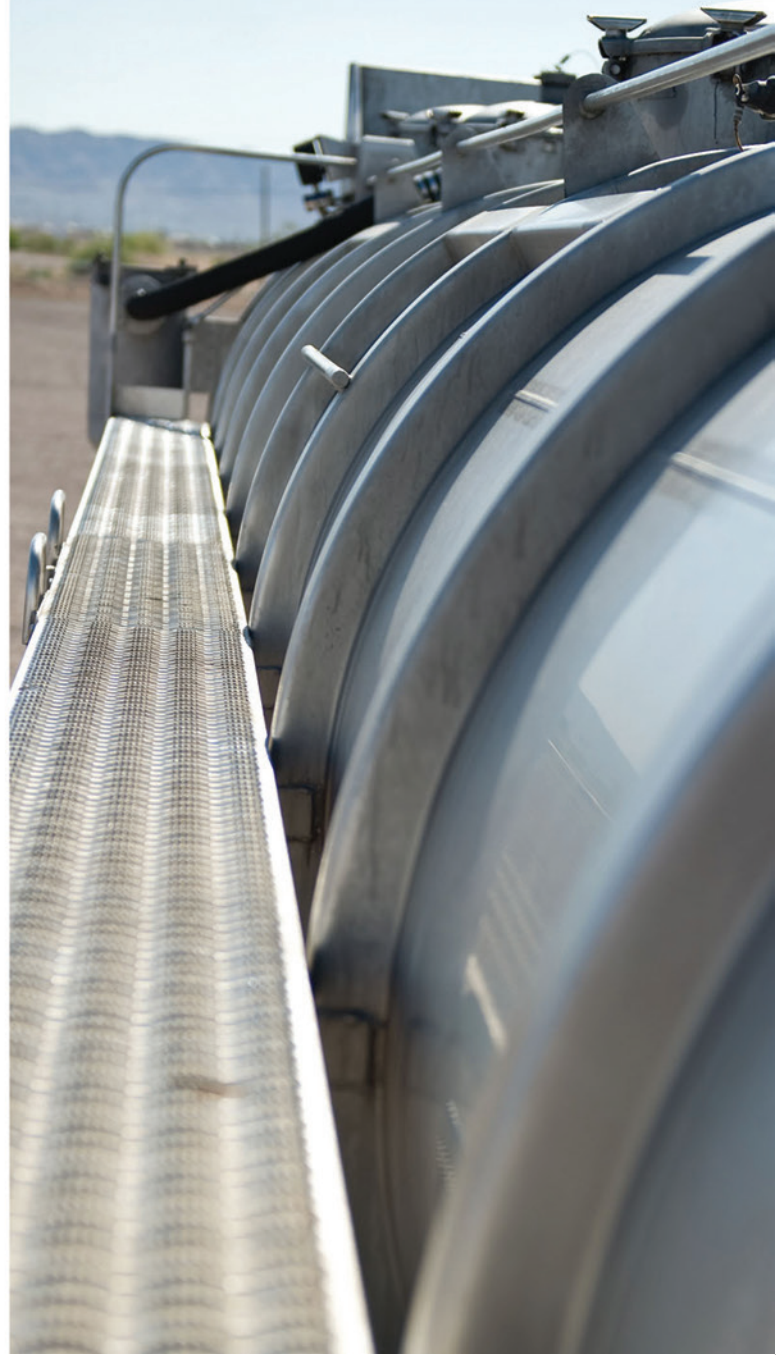
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FROM THE EDITOR



This issue of the Journal of Environmental Management Arizona, February/March 2012, begins our 10th year of publication! I hope you have enjoyed and benefited from the many articles, columns, and advertisements in the Journal over these past many years. It has been a pleasure and honor for the Journal to be a part of Arizona's environmental community — and I look forward to the next ten years!

The focus of the Journal is primarily to provide a platform from which local environmental experts can share information, communicate, and network with other Arizona EH&S professionals. And while technical information is perhaps the "foundation" of that communication, over the years I've learned that it is just as important to serve as a platform for the social milestones in the EH&S community. Such as announcing scholarship awards to young environmental students . . . promotions and job appointments . . . transfers or retirement announcements (*see this issue page 6!*) . . . and occasionally, sadly, obituaries of longtime friends of the environmental community. Thank you, as our readers & contributors, for letting the Journal be part of this community!

If you have been a subscriber of the Journal, as many of you have, from the first issue, you might recognize this issue's cover photo. This is a view of Phoenix, taken from South Mountain, that we used for our very first cover photo in February/March 2003.

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

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SUSTAINABLE RETIREMENT

Interview by: Tom Curry

Journal guest interviewer and Arizona environmental professional Tom Curry met recently with Dr. Nicholas R. Hild, recently retired Professor and Associate Chair at the Arizona State University College of Technology and Innovation, to speak with him about his extended career in the environmental field in Arizona and ask for his reflections going forth into retirement. Dr. Hild is now Emeritus Professor and Senior Sustainability Scientist in the College of Technology and Innovation. He can be reached by e mail at drnick@asu.edu. He also continues to write his column for the Journal of Environmental Management Arizona: Sustainability and Sustainable Development.



Nicholas R. Hild, PhD.

TOM CURRY: Not to say you are old, but you have been around the valley for quite some time, and have seen, and more to the point, participated in the developing environmental field pretty much since its beginning. An environmental professional in the valley, if they have been here for more than just a year or two, is sure to have heard your name in conversation. You have worked on the Motorola 52nd Street TCE contamination, since before it became a federal Superfund site; you were instrumental in the formation of, if I am not mistaken, the valley's first environmental association, and have been a driving force in the development of ASU's College of Technology's Environmental Technology Management curriculum.

But there may be someone reading this article that has just entered the environmental field and may not have heard of you, so let's set the stage with a few questions about how this all started.

Where did you get your education, and what was your introduction into the environmental field, if it was called that even, back when you started?

DR. NICHOLAS R. HILD: Thank you, Tom. I graduated from the University of Iowa with a BS in Mechanical Engineering in 1972, and an MS in Environmental Engineering in 1973. and I received my PhD in Environmental Engineering Management from Union

University and Graduate School in Cincinnati, Ohio, in 1979.

I became a part-time PhD student at ASU beginning in 1974. Then, working in the semiconductor industry as an environmental engineer, I realized I wanted more than a traditional PhD program so I began searching for an accredited University that offered opportunities to combine coursework with dissertation research that focused on the (then) paucity of environmental law as it related to the management of environmental activities in industry, at that time a novel idea that traditional academe found difficult to embrace. The programs I found at Union allowed me to take PhD level courses at any NCA-accredited university which could be a part of my academic program at Union, and they liked my dissertation ideas that allowed me to conduct my dissertation research anywhere I chose—a path pioneering the Extended Education model under the University Without Walls program that the Union had founded in the late 1960's.

QUOTE

My Friend, "Dr. Nick"

"I met professor Dr. Nicholas R. Hild in 1987, as the instructor in my first class on RCRA hazardous waste regulations. It turns out that it was also a very fortuitous event, because I met SAEMS co-founder, Glynis Coulter, in that class. As they say: "the rest is history".

He started out by humorously telling us that it would be wise to have strong "religious connections" if we planned to work in this field. (Sometimes divine intervention is the only option left). He also said that we should learn how to spell the three most important words in RCRA: COMPLIANCE, FINES and JAIL.

Also, during his lecture, he kept mentioning "why waste water". After several times, I also began to wonder: "why waste water?" (I learned later that Why? Wastewater was a TSD facility in El Paso, TX!) Talk about a greenhorn!

Clearly, Dr. Hild has been a major positive force in the state-wide environmental community over many years. He has continually provided support, counsel and guidance to so many lost souls out there. We owe him a great debt of gratitude for his many contributions."

*Richard H. Carter
Carter Affiliates, Inc. (CARE)*



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NEXT ISSUE!**

Nicholas R. Hild, PhD.

As it turned out later, after being employed as a Research Professor at ASU, I used that experience to model the Hazardous Waste Management program that I started in 1985. That led to courses being taught all over the Valley and became the basis for our Extended Education program in Environmental Technology Management, that is now ranked first among programs offering Environmental Management academic programs at US universities.

TOM: ADEQ did not exist, with environmental regulations in Arizona being enforced locally, or within the framework of ADHS. You've seen an incredible change in the development of Arizona's environmental regulatory framework. What was the regulatory scenario when you were first working in the field?

QUOTE

"I have not only had the great privilege of being a student of Dr. Nick's in ASU's Environment Technology Management graduate program, but I have also had the unique pleasure of working with him on environmental policy issues affecting the State. Whether in my role as a student, an environment and natural resources paralegal, or as an Arizona State Representative, my education of environmental issues is ongoing under Dr. Nick's tutelage. This is the reason that Dr. Nick is a high-quality educator. We are more than his students, we are his investments. The more time and attention given, the better the investment succeeds. That is how Dr. Nick educates and that is why he will always be an educator and mentor to so many of us."

*Rep. Amanda Reeve
Arizona State House of Representatives*

DR. HILD: At the University of Iowa, I took several courses in my Environmental Engineering masters program in the University Law School that dealt with "environmental policy". At that time, in 1972, I could see that this whole field of environmental management would be effected by policies at the federal level that would lead to a whole new body of laws, environmental, health and safety, that would require professionals who were going to be in industries, to become conversant with

the whole body of laws and statutes just to be able to "manage" those EH&Safety activities for their companies.

The first Earth Day in April of 1970 opened my eyes to the need for professional environmental managers to be conversant with not only all the technical tools available, like water and wastewater treatment technologies, air pollution control technologies, solid and hazardous waste management tools, etc, but to "be in compliance" with whatever laws and/or regulations were impacting their respective industry. At that time, the whole "laws" area was in its infancy since the EPA was just being created and the first major statute, the WQAA of 1972, was still being written. Thus, I looked into my future—and saw that it appeared that future environmental, health and/or safety law was going to play a major part in my life. And that certainly was the case as the whole regulatory environment underpins the work of environmental professionals in the real world today.

TOM: With all the changes over the years, what is your opinion of the direction Arizona's political machine has taken environmental protection of the state? What about the direction of the federal government?

DR. HILD: Arizona seems to swing, environmentally, on who gets elected to the State legislature: if it's conservative in the Governor's chair then usually the enforcement by agencies and the general direction the legislation takes is "soft" on environment. If it's a democrat in the governor's chair, then ADEQ and ADWR get to do more to enforce existing state environmental laws and pass better laws that are more environmentally favorable. They always resist whatever the Fed wants to do so that's sort of a given that, if you are in the regulated community, you



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Right now, we have a conservative governor and house majority leader, but we have Rep. Amanda Reeve as House Environment Committee Chair who, while she is a republican, still is pro-environment enough that she will work with her leadership to get sensible legislation passed—so that is a positive thing for the State. And it is the reason that being a responsible environmental professional in Arizona means you have to be involved in the State's legislative process on a continuing basis, as well as maintaining vigilance with the Federal environmental legislation and what EPA is up to, just to do your job. That is why our ETM program has the emphasis on knowing and understanding how the regulations work and how they provide us with the tools to meet compliance requirements.

Continued next page.



PHOTO: Dr. Nick Hild, Left, with Tom Curry, Right



SUSTAINABLE RETIREMENT

CONTINUED FROM PG 7

TOM: Is there a lack of “balance” between business protection and environmental protection? What does the public and industry need to do to reach a mutually acceptable and protective set of regulations?

DR. HILD: I don’t perceive a lack of balance between business and environmental protection based on my own ... experience as an environmental manager in industry for more than 11 years and a consultant to industry and government agencies for the past 20 years. I think our industries understand now, in the 21st century, that there’s a lot of upside to managing their chemicals and wastes properly, and even beyond compliance, and a lot of downside in today’s regulatory environment to NOT doing that job properly: there also are more financial incentives today for doing the “sustainable” management process, EMS’s and ISO 14001, that lead to huge savings at the bottom line, so I’m really not seeing the intentional mismanagement of EH&S that we had going back into the pre-EPA and pre-EQAct days. I think the ever increasing number of students we have seen in our ETM program at ASU and the fact that they are all being sought after for jobs as managers in industry, is evidence that there is a good balance between these two entities.

TOM: With the growth of the environmental industry in the valley, what was the driving force to start an environmental association?

DR. HILD: Back in 1980, the RCRA and CERCLA hit the “environmental management” scene like a slap in the face. It reinforced the whole idea that there needed to be a better, and more directed, effort to managing SOLID wastes in the country. There were so many sites that were contaminated by UST leaks and mismanaged chemicals being disposed of in places they shouldn’t have been, that it became obvious that this was a totally new emphasis area that needed professionals who had proper technical and management skills. Several people in the Valley recognized there needed to be an “association” of all these various professionals from a lot of disciplines brought together under one umbrella to share information and help conduct remediation and regulatory advisement—people like lawyers, agency regulators, remediation consultants, engineers and laboratories, and industry EH&S personnel who could share their expertise for a common goal like getting our environment cleaned up and managing chemicals and wastes properly. That is why the association started out as the HAZWaste Society, and our first meeting saw over 50 interested

professionals in attendance. It grew from that point to become a very influential organization that had heads of all the agencies and environmental lawyers alike seeking the Society’s advice about proper management programs across the State.

I should mention, by the way, that the environmental professionals at that time who were in Pima county, were car pooling to our monthly meetings for the first two years until they decided to start

their own association to focus on environmental issues in southern Arizona. That association, known as the Southern Arizona Environmental Management Society (SAEMS) has become very successful and their professionals are playing a significant role in both Pima County, and State legislation today—so congratulations to them for what they’ve accomplished in southern Arizona.

TOM: Over the years, you’ve seen a lot of change in the business of the environment, as well as changes in the regulatory agencies. What are the biggest, most significant changes over the years? Which are the good changes, and which are the bad changes? Any prediction for the future? Anything you wish had turned out differently?

DR. HILD: I think the biggest changes have occurred over the years after RCRA and CERCLA were enacted, primarily because there was environmental law that really forced the State to make sure that industry had compliance programs that were consistent with Federal edicts in such Acts as Water Quality Act Amendments, Clean Air Act Amendments, Solid and Hazwaste Acts like RCRA and CERCLA, and the Pollution Prevention Act of 1990. Once industry, and even the ADEQ and DWR regulators, understood their own role in meeting and enforcing those management requirements, it allowed industry and businesses, even small businesses, to understand exactly what they had to do to be “in compliance” and that really was solidified in the ‘90s—it was very much different from the formative years of the ‘70’s and early ‘80’s for professionals in the EH&S field—then, in the early 2000’s there became a shift toward this new mantra called “sustainability” that is fast becoming the management priority for industries and business in the US.

But a cautionary note here: if we are turning out graduates in University programs who do not possess the technical know-how and chemistry, physics, and engineering controls knowledge—graduates who think only that somehow an understanding of environmental policies will allow them to provide their employers with sustainable solutions for industries and businesses, we are fooling ourselves. “Sustainability” programs have popped up at numerous colleges and universities in the past five years that basically have no “technical” requirements, and I believe those students are being scammed—there will be a time when industries and businesses will need to realize that there is more to managing/ implementing “sustainable” EH&S

QUOTE

“It ain’t often you will see a tree hugger in levis and cowboy boots. But that is exactly what you will see when you meet Dr. Nick.”

“Ain’t often you see a tree hugger lovin’ and working on old cars that puke 500 grams of CO per mile. But then again, Dr. Nick still has air credits according to Jesus, who he knows personally.”

Mark Salem
Salem Boys Auto

QUOTE

“Macedonia, Massachusetts... what’s the difference?!”

“This expression became one of Dr. Hild’s favorite expressions when someone would make an obvious error in terminology, which often resulted in a funny situation.

In the winter of 2000, Dr. Hild conducted a training course on solid waste management at the Ministry of Environment in Skopje, Macedonia. In addition to doing an excellent job, making many friends and “enjoying” the polluted air and cold weather, Dr. Hild “dearly” remembers a pack of street dogs led by a one-eyed mutt, which kept him awake every night by barking under his hotel window.”

Kiril D. Hristovski, Ph.D.
Former student, colleague, friend,
and part of his legacy
Asst. Professor, ETM Program
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initiatives than knowing the language of sustainability. It is too early to tell at this point, but when those graduates of those “non-technical” degree programs begin to populate the jobs, they will see that there is nothing they are able to contribute because they don’t have technical insight into how sustainable technologies actually work, so I think you will see that there needs to be another look taken at what skills are needed to be a contributor to our overall environmental health in this country.

TOM: What is in the future for Dr. Nick?

DR. HILD: It is too early in my retirement to say for sure but I am happy that I had the opportunity to be a Manager of Environmental Services for a huge semiconductor company for 11 years, because all the things I learned about remedial investigations and waste management were in those years of experience, together with the 5+ years I spent as a Director and Principal for a large environmental consulting firm that was one of the two WQARF (State Superfund) contractors in 1988 where I got to use the tools I’d learned to actually conduct remedial investigations and Phase II studies throughout Arizona. I used that time to also learn about and work with ADEQ and legislative representatives to understand how to get things done. And, of course, all that was the foundation for beginning our academic program at ASU, in 1985, that has become the number one environmental management program in the country. Then, being able to be a part of a major EPA-funded Brownfields study in the minority community of Naco, was a highlight for me where I got to actually see a community come together to implement a redevelopment of several acres that had been contaminated with cross-border wastewater effluent. It was a 9-year project that provided hands-on experience to a dozen ETM students while providing me yet another great experience in the real world; what’s not to like about all that?

Going forward, I plan to stay involved in the environmental arena by serving on legislative sub-committees and serving on

organizations like the Arizona Environmental Strategic Alliance Advisory Council. As an Emeritus Professor, I still maintain my office on the Polytechnic campus and my ASU email (drnick@asu.edu). I am planning on doing more research as projects become available, and I have a website (Worldsleadingexpert.com) where I manage several publications by leading experts in their field. My Second Edition of Prostate Cancer 2.0 is my first entry on the site and there will be more going forward, as I screen materials that are appropriate for the site.

TOM: Is there anything else you would like to add that we have not talked about?

DR. HILD: It has been a great career and I am happy to have had the many friends and professional associations that have been a part of my life for the past 35+ years here in Arizona. I wish I could list everyone by name but, for the most part, they are from my days in industry and the HAZWaste Society, as well as the literally hundreds of students that have gone on to make me proud that I was a teacher and mentor to them, during their time in the ETM program. I just hope all of them will send me an e mail from time to time, and let me know how they are doing.

And to Jim Thrush, a thank you for letting me write for the Journal of Environmental Management Arizona; it has truly been a highlight of my career. Thank you!

TOM: Thank you, Dr. Nick, and our best wishes on your retirement and future endeavors from from myself and, if I may speak for them, my fellow cohort graduates from the ASU ETM program, from the Journal, and from our *children’s, children’s, children’s!*

Nicholas R. Hild, PhD, can be reached at drnick@asu.com, and you can continue to find his column in the Journal.

Tom Curry is an environmental supervisor with CAP, with over 25 years experience in Arizona’s environmental field and six years in regulatory enforcement with ADEQ. Tom can be reached at 623-869-2353 or by email at tcurry@cap-az.com.

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The Arizona Hydrological Society (AHS) is now accepting applications for our annual internships and scholarships which are sponsored in part by each chapter and the AHS Foundation. Internship applications are due March 31 in most cases and scholarship applications are all due April 30. Please check the AHS web site, <http://www.azhydrosoc.org/StudentResources.html> for details.

Other great student events AHS is involved with this spring include both the Southern Regional Arizona Science and Engineering Fair in Tucson March 12-17 and the Arizona Science and Engineering Fair in Phoenix April 2-4. These events are aimed at children in grades 5th through 12th. AHS members will judge water related science projects and award cash prizes. Additionally, the winners will be invited to show their project at AHS' Annual Symposium and attend our awards luncheon.

Christie O'Day
Executive Director



WWW.SAEMS.ORG

SAEMS will celebrate its 25th anniversary at the SRCRA Seminar May 10, 2012. We will cut the cake during the seminar lunch, and several charter members will reflect on the humble beginnings of the vibrant organization that promotes environmental education and outreach and provides a forum for the exchange of ideas and information. We'll continue the celebration at the forum following the seminar, otherwise known as the RCRA Seminar Happy Hour.

At the January meeting, SAEMS member Derek Koller, an Environmental Specialist at Allwyn Environmental, spoke of the City of South Tucson job training program which recently graduated eight students from the first class. The intensive training covers many aspects of environmental investigation and remediation, and provides the students with several certifications upon graduation and assistance with job placement. Mr. Koller is a graduate of the 2008 City of Tucson Environmental Services Environmental Technician Brownfields Job Training program, for which a number of SAEMS members served as student mentors.

In support of environmental education, SAEMS has recently provided funds for the Southern Arizona Regional Science and Engineering Fair, the Tucson Clean & Beautiful *E Pluribus Recycles!* plays for elementary schools and the Tucson Earth Day Festival. Applications are being accepted for eight SAEMS scholarships ranging from \$500 and \$4,000 for the 2012-2013 academic year for University of Arizona students pursuing a career in an environmental field.

Ken Asch
President



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The Environmental Information Association (EIA) welcomes the new elected 2012 officers and board of directors who look forward to an exciting and productive year. You can visit the EIA website to get more information on this year's leaders and find out how to join the EIA-AZ Chapter. A free regulatory asbestos seminar is scheduled April 20, 2012 to be held in Sierra Vista, Arizona. The seminar will begin at 8 am, includes free lunch, and ends at 4 pm. This is a great opportunity to learn about the asbestos regulations and how they may affect you. The EIA will host the Regional Environmental Conference/Seminar in Phoenix October 4-5, 2012. Please visit our website for additional information regarding this seminar and others planned for 2012.

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 for information on all upcoming events sponsored by EIA-AZ and for membership and sponsor opportunities.

Vicky Aviles
Past President



WWW.VALLEYFORWARD.ORG

CREATING A RENEWABLE ENERGY ECONOMY IN ARIZONA

It's not for lack of interest, collaborative effort or even political will that the renewable energy industry in Arizona is fledgling. Regulatory uncertainties have hindered our transition to clean energy. That's what business leaders told Secretary of the Interior Ken Salazar in Tempe as part of a roundtable discussion on how to advance renewable energy in our state. Other concerns are financing, siting and transmission but nothing matters more than the ability to sell renewable energy to California, where demand is highest.

With leadership at federal, state and local levels, we can grow the renewable energy sector and create new jobs while enhancing our environmental quality. Arizona is poised to be a leader in developing clean energy like wind and solar on public, private and tribal lands.

There have been setbacks in the vision for a renewable energy economy in Arizona but it's still our greatest opportunity to regain prosperity. We'll need continued federal and state support. Additionally, public and private sectors must work together to foster long-term policy solutions.

Arizona stands ready to deploy our workforce, encourage business innovation and promote U.S. leadership in 21st century clean technologies.

Diane Brossart
President



WWW.AZCHAMBER.COM

ARIZONA CHAMBER
of Commerce and Industry

The Arizona Chamber will hold its 2012 Heritage Award Dinner honoring Coach Frank Kush on Friday, March 2, 2012 at ASU's football stadium. In addition, the Arizona Manufacturer's Council will hold its annual Manufacturer of the Year Awards Luncheon on Friday May 11, 2012 at the Hyatt Regency Downtown Phoenix. More information on both of these important events can be found at azchamber.com.

The Arizona Chamber and Manufacturers Council Environment Committee will hold its next breakfast meeting on Wednesday, March 14th at the Sheraton Phoenix Airport Hotel. Breakfast is served at 7:00 AM with speakers beginning at 7:30. Watch azchamber.com for more details.

Jeff Homer
Chairman
Environment
Committee



Arizona Chapter



partnering with the Southern Arizona Chapter and the National Safety Council, Arizona Chapter.

The summit will be held at the Arizona Golf Resort in Mesa, AZ on April 10, 2012. Prior to the summit, there will be a golf tournament benefiting the ASSE Foundation for a chapter scholarship to assist students trying to achieve an EH&S education on April 9th.

The AZ Chapter will also be hosting an ASP Safety Fundamentals workshop on April 24-26 at the Arizona Safety Education Center in Tempe. We will be meeting on the first Friday of each month until June at the Arizona Country Club in Phoenix. Our March Speaker is Mike Finnel who will talk about NFPA 70E and Arc Flashes. Our April speaker will be Darrin Perkins, Director at Arizona Division of Occupational Safety and Health. You can visit our website at az.asse.org for more information on any event. C'mon out! We would love to see you.

Tim Page-Bottorff
President-Elect



AMERICAN SOCIETY OF SAFETY ENGINEERS

We had a great turnout for the Southern Arizona Safety Council meeting with Eric Giguere during our February Southern Arizona Safety Council meeting. Thanks again to Southern Arizona ASSE, Southwest Gas, Arizona Rock Products Association, Trench Shore Rentals, Associated General Contractors and Arizona Bluestake for the support to bring him here to Tucson.

Save the date for the annual American Society of Safety Engineers banquet. It will be held on Thursday May 24 with guest speaker Ron McKinnon. 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.

Alexis Westin
Secretary



WWW.AZAEP.ORG

about nothing." Many of us were surprised to learn that some of the most genetically modified crops include cotton, soybeans, corn, and alfalfa.

AZAEP's February 28th meeting will be held in Tucson, where Jeremy Lite of Quarles & Brady will discuss recent NEPA Case Law and Issues Updates. The March 27th meeting will be held at our usual spot, Grimaldi's Pizzeria in Old Town Scottsdale, and will feature Kris Gade of AECOM presenting on Plant Migration Along Transportation Corridors. And, for the April 24th meeting, we have Lisa Spahr of EEC speaking on Stormwater Permitting Issues. Other upcoming events, job postings, and relevant articles and links can be found on our website. We hope to see you at an upcoming meeting!

Michael Zorba
President



WWW.AZBAS.NET

healthy environment, and sound public policy.

We meet four times a year for the primary purpose of holding in-depth dialogues among participants to share, learn from, challenge and test the sustainability practices that are in place—or in developmental phases—in our companies. The overarching goal is for Arizona businesses to step forward together and grow sustainability concepts and activities in Arizona's diverse communities.

Please save the dates for our 2012 meetings and facility tours:

AzBAS Annual Membership Meeting. Thursday, March 8, 2012, 10 AM to 2 PM. **Location:** Republic Services, 18500 N. Allied Way Phoenix, Arizona.

AzBAS General Meeting. Thursday, June 14, 2012, 10 AM to 2 PM. **Location:** USAA, One Norterra Drive, Phoenix, Arizona.

Please contact me at sheila@gettingitdone.org if you have any questions.



ESH for
High Technology

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CA, at the beautiful Dolce Hayes Mansion. The SESH Annual Symposium & Exhibition provides an opportunity for continuous professional growth through presentations and discussions with world class EH&S professionals. The symposium is a forum for openly discussing EH&S issues challenging today's high tech professionals. The Annual SESH Symposium is a well-established annual event that is the premier global ESH conference for the high technology industries. It offers a public arena for the exchange of up-to-date experience among the semiconductor, PV, LED and TFT-LCD industries, suppliers and research institutes for adoption of recent technology developments. Check our website for more information and details on planned events, including: Golf Tournament; Wine Tour; 5k Fun Run.

We are pleased to announce that the 34th Annual SESH Symposium will be held April 9th to April 13th, 2012 in San Jose, CA.

Vijaya Geetha KS
President



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Alliance Members gathered in Phoenix in December at "The Turf" for an end-of-year social happy-hour meeting and to celebrate Scott Davis' recent retirement from APS. Scott has represented APS, an Alliance Founding Member, on the Alliance board for many years, including terms as Chair and Vice Chair. The Alliance presented Scott a plaque (see photo) to show our appreciation of his years of outstanding leadership and service! Scott did not stay away from the Alliance for long, however—in January, he was elected to serve, as an individual professional, on the Alliance Advisory Council.

For information on the Alliance call our office at 480-422-7392 or visit our website.



Dan Casiraro, Alliance Chair, presents plaque of appreciation to Scott Davis, Board Member



Dan Casiraro
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Larry Olson, PhD.

IT'S ALL ABOUT CHEMISTRY

THE SCIENTIFIC METHOD

You remember learning about the scientific method in grade school? It probably seemed pretty dry and it might have been hard to imagine that it would result in controversial headlines in the *Washington Post*, *New York Times*, and the *Wall Street Journal*.

Nevertheless, we are witnessing an example of how science works right now. In a December 2010 article first published online (*Science*, DOI: [10.1126/science.1197258](https://doi.org/10.1126/science.1197258)), Felisa Wolfe-Simon *et al* made the astonishing claim that a bacterium isolated from the mud of Mono Lake, California was able to substitute arsenic for phosphorus in various macromolecules, including DNA. Mono Lake contains a high concentration of dissolved arsenic (200 μM on average) and if the bacterium, named GFAJ-1 which (no kidding) stands for Give Felisa a Job, is able to substitute arsenate for the phosphate backbone in DNA it would revolutionize our thinking about how life evolved and what forms extraterrestrial life might take. Because of that, the findings were announced at a press conference right before publication and the blogosphere immediately went into overdrive.

This is another example of how the internet has fundamentally changed the way we discover, disseminate and react to new knowledge. Normally, publication of a paper would result in letters to the editor questioning aspects of its findings and further studies that try to duplicate the results and verify or challenge the conclusions. With print journals the process would

take months or years. In this case, however, within a matter of days a number of respected scientists used internet postings to question the procedures and analytical techniques of the Wolfe-Simon group on which their conclusions were founded. As John D. Sutherland of Cambridge said, "Such a dramatic claim makes rock solid characterization absolutely mandatory." (C&EN, December 8, 2010).

But a week later, on December 17, 2010, the *Washington Post* published an article by science reporter Marc Kaufman that claimed the "torrent of criticism in the blogosphere has turned a widely reported scientific triumph into a scientific football – with much discussed implications for how research will be evaluated and presented in the future." One of the co-authors of the work, Ronald Oremland, complained that the online attacks made him feel that he was in a "Jerry Springer like situation, with people throwing chairs."

So an even more fundamental question than arsenic based life forms is the issue of how science works. Are blogs a serious form of communication among scientists? Did the reviewers for *Science* fail at their job by allowing the Wolfe-Simon paper to be published? What happens when fundamental tenants of science are challenged (think of the recent claim by researchers at CERN that a subatomic particle may have exceeded the speed of light). Oremland claims that much of the criticism he has received has been venomous. "My fear is that scientists will be afraid to test radical ideas" he says. "If you don't think, and you don't try, and you don't test, then everyone just keeps doing the same incremental stuff." (C&EN, January 30, 2012).

What is the final result of the arsenic controversy? In the June 3, 2011 issue of *Science*, a number of "technical comments" criticizing the work were published along with the Wolfe-Simon's group response and a more detailed explanation of their methodology. They also made samples of the GFAJ-1 bacterium available to other groups, which included Rosemary J. Redfield of the University of British Columbia who is a major critic. She tried to replicate Wolfe-Simon's work and sent the microbes grown in an arsenic rich medium to Princeton for analysis in late November 2011. None of the samples showed any sign of an arsenic based DNA building block. This may or may not conclude this particular episode. But the controversies over how science is conducted will surely continue.

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

Smoke School

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EPA Method 9 Visible Emissions Training Spring 2012 Smoke School Schedule*

March 1: Mesa, AZ (ASU Polytechnic)
March 6-7: Tucson, AZ
March 8-9: Yuma, AZ
March 13: Gallup, NM
March 14: Holbrook, AZ
March 15: Cottonwood, AZ
March 28-29: Las Vegas, NV
April 3-4: Kingman, AZ
April 5: Flagstaff, AZ
April 11-12: Glendale, AZ
April 18: Safford, AZ
April 25-26: 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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NEWS BRIEFS

FNF CONSTRUCTION, INC. AGREES TO \$115,000 SETTLEMENT FOR AIR QUALITY VIOLATIONS IN NAVAJO, YUMA, COCHISE, MOHAVE AND PINAL COUNTIES

❖ The Arizona Department of Environmental Quality and Arizona Attorney General's Office announced recently that FNF Construction, Inc. of Tempe has agreed to a settlement worth \$115,000 as part of a consent judgment to resolve air quality violations that occurred at hot mix asphalt plants in Navajo, Yuma, Cochise, Mohave and Pinal counties from 2008 through 2011.

In addition to an \$85,000 monetary penalty, the settlement also requires the use of a \$30,000 computer system that allows the company to remotely view information about the operation of the facility to provide reasonable assurance that the facilities will remain in compliance. FNF will not have to pay \$25,000 of the penalty if it operates for two years without further, significant violations.

In 2008, ADEQ staff inspected FNF's facility in Navajo County near Winslow and determined that it was not using the necessary precautions or air pollution control devices and practices to reduce dust emissions from its equipment. As a result, the dust cloud observed by the inspectors was thicker than allowed by the facility's permit. Further investigation by the inspectors revealed that staff at the facility did not have the appropriate certifications to identify excessive dust emissions and that the facility did not keep records of mandatory self-audits.

In 2009, the facility that had been in Navajo County had been moved to Yuma County near Yuma International Airport. ADEQ staff re-inspected this facility as well as a different plant in Mohave County. Both

inspections revealed that the facilities had violations similar to those observed in Cochise County. The facility in Yuma County subsequently moved to Cochise County near the Dragoon Mountains and failed a performance test designed to measure the amount of air pollution being emitted through the main stack of the facility.

In 2010, ADEQ staff re-inspected the hot mix asphalt facility in Mohave County near Kingman and determined that the facility was operating equipment without obtaining the necessary permit documents or performing the required performance tests for air pollution from the facility.

In 2011, the facility that had been in Navajo, Yuma and Cochise Counties had also operated in Pinal County near Casa Grande and failed a performance test for dust emissions.

"These are serious violations that degraded air quality in five counties around the State," said ADEQ Director Henry Darwin. "The company has resolved the violations and we hope this settlement is a new beginning."

"These kinds of highway construction companies need 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 Maricopa County Superior Court approval

TIM MILLER JOINS NINYO & MOORE AS SENIOR ENVIRONMENTAL SCIENTIST

❖ Ninyo & Moore announced recently that Timothy J. Miller, C.R.S., has joined its Phoenix office as a Senior Environmental Scientist. Tim is a seasoned environmental professional with over 17 years of experience in the Arizona market place and is an Arizona Certified Remediation Specialist. He holds a Bachelor of Science degree in Forestry from Northern Arizona University. His experience includes managing Phase II and Phase III environmental assessment and remedial efforts. Remedial project experience includes soil vapor extraction, dual phase extraction, air sparge, stabilization of lead in soil, and pesticide/herbicide excavation, transportation, and disposal. Tim has a great deal of experience working for private sector clients and enjoys developing business relationships and opportunities. Tim will lead Ninyo & Moore's Arizona Phase II and Phase III efforts as well as their asbestos, lead-based paint, and mold practice. Tim is an active member of Environmental Information Association, Arizona Chapter (Two-Time Past President), Valley Partnership, Asbestos Professionals Network, Certified Commercial Investment Members (CCIM), Environmental Bankers Association (EBA), and Environmental Professionals of Arizona (EPAZ).



Timothy J. Miller

The Phoenix office of Ninyo & Moore is located at 3202 East Harbour Drive, Phoenix, AZ 85034. Tim can be reached by phone at 602/243-1600 or email tmiller@ninyoandmoore.com.



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INDUSTRIAL SERVICES | WASTE MANAGEMENT

ARIZONA FILES REQUEST TO INTERVENE IN LAWSUIT INVOLVING THE EPA / DEMANDS SEAT AT THE TABLE

❖ The Arizona Department of Environmental Quality and Arizona Attorney General's Office announced today that the State has filed a request Dec. 23rd to intervene in a lawsuit between a group of special-interest plaintiffs and the U.S. Environmental Protection Agency regarding the implementation of a plan to address visibility issues in some of the State's national parks and wilderness areas.

"ADEQ is tired of the EPA and special-interest groups making decisions through litigation in Washington, D.C., that directly impacts Arizona without affording Arizona a seat at the table," said ADEQ Director Henry Darwin. "The Clean Air Act gives States the right to develop air quality plans to address issues such as regional haze. The plaintiffs do not represent Arizona, and we have a responsibility and a right to be involved."

Arizona Attorney General Tom Horne said that the proposed consent decree does not follow established guidelines.

"I am very concerned about collusion between the federal government and environmentalists who are entering into a 'consent agreement' that is unjustified and damaging to the economy. This can only be described as a series of meddlings by the federal government into areas where the State of Arizona should have an explicit role," Attorney General Tom Horne said.

Among the plaintiffs in the proposed consent decree are the Grand Canyon Trust, Sierra Club, Environmental Defense Fund, National Parks Conservation Association, Montana Environmental Information Center, San Juan Citizens Alliance, Our Children's Earth Foundation, Plains Justice, and Powder River Basin Resource Council.

Arizona originally submitted a regional haze plan to the EPA in December 2003, and updated that plan one year later. The EPA then determined in January 2009, more than five years later, that specific parts of the plan purportedly were incomplete. For the next 16 months, Arizona worked with partner states Utah, Wyoming and New Mexico – as well as the EPA – to resolve outstanding issues and provide the EPA with the information that it had identified.

When it became clear that the EPA's concerns could not be resolved in a timely manner, ADEQ took steps to rework the plan that had been submitted in 2004, ultimately submitting a revised regional haze plan on February 28, 2011.

Under the proposed Consent Decree, and contrary to the procedures set forth in the Clean Air Act, the EPA must propose action on that plan by May 15, 2012, as well as propose a federal plan to cure any deficiencies the EPA might identify in the State's plan. A final decision is due by Dec. 15, 2012. Without first taking action on the State's plan, EPA sent letters to Arizona businesses last month asking for information that could be used to develop a federal air quality plan without first taking action on the proposed State plan.

Under the Clean Air Act, Consent Decrees that involve the EPA must be made available for public comment and review prior to being finalized. Comments on the proposed Consent Decree must be received by the EPA no later than Jan. 3.

GET BACK TO BASICS WITH: RESPIRATORS



It is easy to become complacent when working in an industry for an extended period of time and your job requires the use of a respirator. Donning a respirator for some is as common place as brushing your teeth or going to work everyday. But improper respirator use is one of the most frequently observed occurrences by this consultant. A respirator is the most important defense in protecting

yourself from harmful respiratory exposure.

One of the earliest historical references to protective respiratory equipment can be traced to the 16th century. Leonardo da Vinci designed a weapon for use on ships and suggested that a finely woven cloth dipped in water and held firmly over their faces could protect sailors from the toxic powder generated from using the weapon. The first US patent for an air purifying respirator was granted to Lewis P. Haslett in 1848. The patent was for the "Haslett's Lung Protector" and used one-way clapper valves and a filter made of moistened wool. Many patents for air purifying respirators have been issued since that time.

Properly donning a respirator requires nothing to be between the face piece of the respirator and the face or the straps of the respirator and the head. When conducting work that requires the use of a respirator it is good practice to don the respirator in the exact way that the respirator was worn when the acceptable fit test was achieved. This includes positioning the respirator straps on the crown of the head and not over clothing or protective suits. And keep your respirator on at all times when working in contaminated areas or other areas where respiratory exposure may occur. Take a break and think – when using respiratory equipment and don't become complacent. It just may save your life.

Vicky L. Aviles, AEP, CIAQM. Principal/Western Technologies. Vicky can be reached at 602-437-3737 Ext. 123 or by email at vicky.a@wt-us.com.



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