

JOURNAL OF Environmental Management ARIZONA

PRACTICAL AND CURRENT INFORMATION FOR ENVIRONMENTAL, HEALTH AND SAFETY PROFESSIONALS

Have you HUGGED
an ADVERTISER TODAY?

Del Mar Analytical TESTING for TPH

by Julie Slocum Hoskin,
DMA, pg 8

WATER FROM OUR OCEANS

by David L. Kirchner,
Basin & Range, pg 14

ADEQ DRAFT REVISIONS TO APP RULES

by Mike Ford, pg 18

ENVIRONMENTAL
COMPLIANCE
ASSURANCE PROGRAMS
Roger K. Ferland, pg 22



The Journal is FREE to
Qualified EHS & Professionals!
Have you subscribed?
480-422-4430
online:
www.ehshomepage.com

August / September 2004 Vol 2 No. 4

ARIZONA ISSUES
ARIZONA ADVERTISERS
ARIZONA READERS



A World Leader In Environmental Services and Chemical Distribution

ChemCare® is a comprehensive waste management and disposal service from Univar USA.

You can depend on Univar to help you select the most economical and environmentally sound waste disposal technology available anywhere. We manage and dispose of your hazardous and non-hazardous waste products safely, quickly and efficiently.

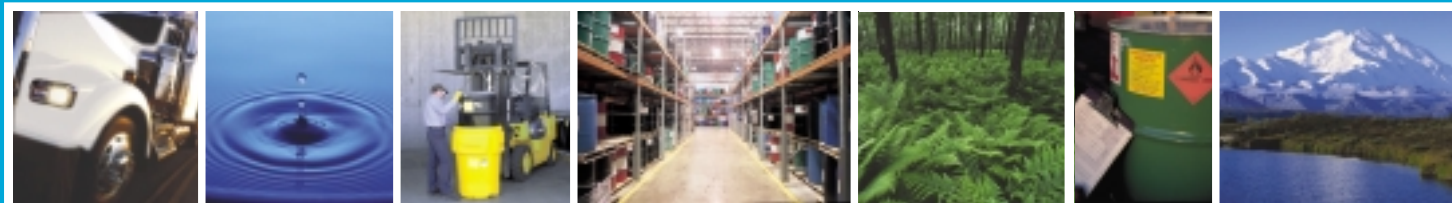
Univar - Phoenix

50 S. 45th Street
Phoenix, AZ 85043-3907
1-800-909-4897

Univar - Tucson

3791 E. 43rd Place
Tucson, AZ 85713-5403
1-800-909-4897

For more information, call us or visit our Web sites at www.univarusa.com or www.chemcare.com



Part of a
bigger picture...

Delivering integrated
business solutions
that help you
protect the environment,
manage risk, and
add value to your bottom line.

Infrastructure

- Transportation
- Water and wastewater
- Solid waste
- Land resources

Buildings

- Program management
- Architecture and engineering
- Planning and programming
- Interior design

Environment

- Operating facilities management
- Site investigation and remediation
- Risk and associated services
- Real estate and asset solutions

Go beyond your expectations with **ARCADIS**



Infrastructure, buildings, environment, communications

8222 South 48th Street, Suite 140
Phoenix, Arizona 85044
Tel 602.438.0883
Fax 602.438.0102
www.arcadis-us.com



7 Terminals
throughout the
Western states

Hazardous/Non-Hazardous Transportation
Environmental Remediation Services
Waste Management
Emergency Response Services - 24 Hrs



3045 South 51st Avenue, Phoenix, AZ 85043
602-278-6233 800-833-7602 Fax: 602-278-2884
www.mpenviro.com

Arizona's Leader in Industrial Hygiene and Emergency Response Supplies.

Spill Containment & Control Products
Customized Spill Kits (5, 10, 35 & 70 gallon
- You name the size)

Sorbent pads, socks,
booms, pillows & drum
tops for oil, water,
coolants, solvents,
acids & bases.

Water Treatment Systems

- Arsenic
- Hydrocarbons
- Emulsions
- Oil
- Mercury

MYCELX
TECHNOLOGIES CORPORATION

Spillyter

FLOWMATIC
YOUR SINGLE SOURCE SUPPLIER

EAGLE

Solmetex

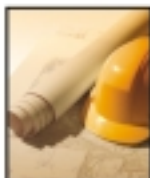
The Power of Applied Science.

McPhee

Environmental Supply, LLC

1-888-608-4637

11460 N. Cave Creek Road, Ste #1 • Phoenix, AZ 85020
(602) 943-9565 • FAX (602) 943-3194
www.mcphee-env.com



State-of-the Art Solutions in the world of Engineering and Construction

Water / Wastewater
Environmental
Agricultural Services
Brownfield Redevelopment



**CONESTOGA-ROVERS
& ASSOCIATES**
Engineers & Contractors

4050 East Cotton Center Blvd., Suite 49
Phoenix, Arizona 85040
Phone: (602) 749-9400 Fax: (602) 749-9500

www.CRAworld.com

Environmental, Health & Safety Seminars

The Fall 2004 and Spring 2005
Schedule for Training Courses is
Available ONLINE at: www.east.asu.edu/seminars/.



OSHA, DOT, and EPA courses provided include:
HAZWOPER (40HR and 8HR REFRESHER); HAZAR-
DOUS MATERIALS TRANSPORTATION (49 CFR AND IATA,
initial and refreshers), RCRA; CLEAN AIR ACT; WATER
QUALITY; AND EMERGENCY RESPONSE TECHNICIAN
LEVEL.

For registration and a complete list of courses, fees, and
course descriptions including site specific training, see our
web site: www.east.asu.edu/seminars/.

FOR MORE INFORMATION CONTACT DENISE KOLISAR
480-727-1825 OR
HAL BERKOWITZ 480-727-1323.

*Our 15th year of providing regulatory compliance
training courses.*

ASU ARIZONA STATE
UNIVERSITY

RECYCLING FOR A BETTER ENVIRONMENT



Industrial & specialty solvent & antifreeze recycling
Recycling for alternative fuels
Waste water treatment & recycling
Industrial services
Lab packing
On-site services/project management
Specialized recycling programs
Acid/base treatment
Transportation
Reclaim solvent and other commodity sales
Comprehensive waste management services



The full service leader in waste management through recycling and reutilization.

ROMIC - SOUTHWEST

6760 West Allison Road, Chandler, AZ 85226-5130
(520) 796-1040 FAX (520) 796-6214 (800) 952-5760



Let's Be Perfectly Clear.

You should choose your environmental attorney based upon reputation, credibility and experience.

Quarles & Brady
Streich Lang LLP

We have all the elements.

For more information, contact
Roger Ferland
(602) 229-5607
rferland@quarles.com

www.quarles.com

JOURNAL OF Environmental Management

ARIZONA

August / September 2004

Volume 2 Number 4

CONTENTS

FEATURES AND ARTICLES

8 TOTAL PETROLEUM HYDROCARBONS

JULIE SLOCUM HOSKINS

20 ENVIRONMENTAL COMPLIANCE ASSURANCE PROGRAMS

ROGER K. FERLAND

16 WATER FROM OUR OCEANS

DAVID L. KIRCHNER

COLUMNS

13 It's ALL ABOUT CHEMISTRY

PARTICULATE MATTER

LARRY OLSON, PHD.

17 SUSTAINABLE DEVELOPMENT

SUSTAINABLE PERSONAL TRANSPORTATION

NICHOLAS R. HILD, PHD.

18 REGULATORY DEVELOPMENTS

ADEQ UNVEILS DRAFT REVISIONS TO APP RULES

MICHAEL C. FORD, ATTORNEY

DEPARTMENTS

- 6 FROM THE EDITOR
- 7 LETTERS TO THE EDITOR
- 19 NEWS BRIEFS
- 10 ASSOCIATIONS PAGES
- 23 PROFESSIONALS PAGES
- 6 ADVERTISERS INDEX
- 6 FIND IT!
- 23 CALENDAR



Testing For TPH
page 8



Particulate Matter Pollution
Larry Olson, PhD.
page 13



RECOVERING TODAY'S RESOURCES FOR A CLEANER TOMORROW

We specialize in the treatment of non-hazardous liquid waste through physical separation, chemical treatment, biological treatment and sludge de-watering technologies.

- Waste disposal solution that is both economical and environmentally sound.
- On-site laboratory for profiling waste / sample technicians.
- After treatment, reclaimed water is returned to Arizona.
- Manage liquid waste for thousands of clients including some of Arizona's largest companies.
- Ask us about a cost effective alternative to your current waste disposal method.



Call Us Today
602-278-3442 / 800-756-7084
**RESOURCE RECOVERY
TECHNIQUES OF AZ, INC.**
www.rtaaz.com

COVER PHOTO: HOLLY BRADLEY TAKES TEMPERATURE READINGS OF INCOMING SAMPLES AT DEL MAR ANALYTICAL LABS. SEE RELATED STORY ON PAGE 8.

FROM THE EDITOR



We are very pleased to welcome six new advertisers to the Journal in this issue! Thank you all for joining us, and also thank you readers who continue to support Journal advertisers.

Are we are living in a whole new world? Late in July, Reuters published a story about a man wanted by law enforcement for questioning. Why? He was seen on a highway around 5 PM taking pictures of two oil refineries in Texas City, Texas. The man, driving a

white van, was described as white with dark hair, according to Reuters. "While it is not illegal to take pictures of a refinery from a highway or street, officials would like to talk to the man to find out his reason for taking the photographs."

Well, if I had an opportunity to see an oil refinery in Texas, I would probably want to stop and take a few pictures also. Some of the stories published in past Journal issues include photos that I took from the street (IWU, April/May 2003). But now, in this post-9/11 world, the act of taking a picture may get a person 'wanted' for questioning. (PS — no, that wasn't me in the white van.)

SESHA (the Semiconductor Environmental, Safety and Health Association) has joined the Association Pages. Kim Smieja, SESHA President, introduces her organization to readers in this issue. Welcome to the Journal, SESHA!

As always, thank you to all who contributed to this issue, including Julie Slocum Hoskin (TPH, pg 8) and Dianne Frydrych (Env. Comp. Assurance Programs, Roger Ferland, pg 22), David L. Kirchner (Water, pg 16), all our contributors, advertisers and readers.

Sincerely,

Jim Thrush

Publisher & Editor

Journal of Environmental Management Arizona

EDITORIAL

Publisher & Editor

James Thrush, M.S. Env. Management
jimthrush@ehshomepage.com
480-422-4430 x42

ADVISORS

Legal

Lown & Hilleman, PLC

Editorial

R. Bruce Scott, Nicholas R. Hild, Larry

Olson, Julie C. Rogers, J. Andy Soesilo

Photography

Chuck Holland

BUSINESS MANAGEMENT

Office Manager

Robert Padilla, 480-422-4430 x46

COLUMNISTS

Regulatory Developments

Michael C. Ford *Bryan Cave LLP*

Sustainable Development

Nicholas R. Hild, PhD.

Arizona State University

It's All About Chemistry

Larry Olson, PhD. *AZ State University*

PROGRAMMING & TECHNICAL

Hiep Van Vo

SUBSCRIPTIONS

Subscribe at: www.
ehshomepage.com, or call 480-
422-4430, or email to:
Subscribe@ehshomepage.com.

RATES:

FREE to Qualified Environmental
Professionals and individuals in
closely related fields.

BUSINESS

Mailing Address:

Journal of Environmental
Management Arizona

3145 E. Chandler Blvd, Suite

110-641, Phoenix, AZ 85048

Telephone & Fax: 480-422-4430

ADVERTISING

Advertisers: contact us at
480-422-4430 x42.

The JOURNAL is
published 6 times a year.

Copyright © 2004 by the
*Journal of Environmental
Management Arizona.*
All rights reserved.

ADVERTISER INDEX

ADVERTISER	PAGE
Aegis Environmental Strategies	21
Arcadis	2
Arizona State University EH&S Seminars	3
Arizona State University East Office of Env. Technology	23
Basin & Range Hydrogeologists, Inc.	24
Carter Affiliates, Inc.	23
Conestoga-Rovers & Associates	3
Del Mar Analytical	19
Diversified Transportation Inc.	20
Eddie Martinez, Realtor	23
Environmental Compliance Solutions, Inc.	23
Graphics Outpost	23
Lown & Hilleman, PLC	15
McPhee Environmental Supply, LLC	3
MP Environmental	3
Philip Transportation & Remediation	7
Quarles & Brady Streich Lang LLP	4
R. Bruce Scott, LLC	23
Resource Recovery Techniques of AZ, Inc.	3
Rogers Consulting Services, LLC	21
Romic Environmental Technologies Corp.	4
SA&B Environmental & Chemical Consultants	22
Transwest Geochem	7
Turner Laboratories, Inc.	19
Univar USA Inc.	2

FIND IT!

FIND PEOPLE, SUBJECTS, & FACILITIES IN THIS ISSUE

AAI 10	King, Tekla 22
ACHMM Thunderbird 22	Kirchner, David L. 16
ACHMMThunderbird 10	LFR Levine Fricke 19
AESF 11	Malone, Laura 19
air pollution 13	Martinez, Eddie 15
APP Rules 18	Matlock gas and equipment 19
Arizona Hydrological Society 11	McPhee Environmental Supply 19
Arsenic in drinking water 19	Olson, PhD., Larry 13
AZ ELM 12	Padilla, Anthony 22
Bonillas, Frank 14	Particulate Matter 13
Bradley, Holly 5	Paulausky, Chuck 10, 22
Brossart, Diane 14	Pinkerton, Barbara 22
Brown, Vi 12	Plato, Paul 11
Conway, Matt 22	Popeck, Charlie 12
Culbert, Lisa 19	Rai, Shwetha, M.S. 7
Davis, Rob 15	Regulatory Developments 18
Env. Compl. Assurance Programs 20	SAEMS 14
Environmental Excellence Awards 14	Schrader, Corey 9, 22
EPAZ 15	SESHA 12
Ewing, Andy 22	Slocum Hoskin, Julie 8
Ferland, Roger K. 20	Smieja, Kim 12
Fields, Jerry 22	Sustainable Development 17
Ford, Michael C. 18	Total Petroleum Hydrocarbons 8
Forest Energy Corporation 15	Transportation for the Future 17
Frydrych, Dianne 20	U.S. Env. Protection Agency 19
Hauer, Tabitha 22	US Green Building Council 12
Hild, PhD., Nicholas 17	Valley Forward 14
Holmes, Joe 22	water supplies 16
Homer, Jeff 10	Wendt, Susan 22
Hoskin, Julie Slocum 22	Westerhausen, Barry 11
hybrid cars 17	Young, Barbara 22
Kading, Kelly 22	

LEGAL DISCLAIMER

Information presented in the Journal of Environmental Management Arizona originates from a variety of sources presumed to be accurate and complete. However, 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 the Journal. Readers are encouraged to contact authors, agencies, advertisers, and companies directly for verification and/or clarification. Material in the Journal is for informational purposes only, and should not be considered as legal or professional advice. Please consult your own legal counsel or environmental consultants with questions regarding your safety or environmental compliance matters.

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.

TO THE JOURNAL:

LETTER'S & EMAILS



• Full Service Environmental Laboratory
• Mobile Laboratories (screening & compliance)
• Sampling Services
• Testing for: CWA, RCRA, SDWA, TSCA

www.transgeo.com

**TRANSTWEST
GEOCHEM**

Toll Free: (800) 927-5183
Phone: (602) 437-0330
Fax: (602) 437-0660

3725 E. Atlanta Ave., Suite 2, Phoenix, AZ 85040

EDITOR:

This is in reference to the articles "Storage of Incompatible Chemicals" and "Removing Arsenic in Drinking Water" published in the February/March 2003 Vol 1 No 1 and April/May 2003 Vol 1 No 2 issues of the Journal of Environmental Management Arizona. As a Masters Student of Environmental Technology I was looking for materials on Toxicology and chemistry of Hazardous Materials. The content provided in the above articles was a very useful reference material for my course paper. In addition, articles on EHS, Environmental Laws and Regulations, and Toxic Substance Control Act (TSCA) have helped me broaden my knowledge on environmental issues. Thanks for publishing these and similar articles on environmental issues and helping Graduate Students like me relate my course work to the industry.

Yours Sincerely

SHWETHA. RAI, M.S.

Graduate Research Assistant,
Environmental Technology Management Program,
Arizona State University East

Email: letters@ehshomepage.com

Fax: 480-422-4430

JEMA 3145 E. Chandler Blvd,
Suite 110-641 Phoenix, AZ 85048

PSC

Philip Transportation and Remediation, Inc.

PTR

PHILIP TRANSPORTATION
& REMEDIATION
A Division of Philip Services



ENVIRONMENTAL SERVICES

Lab Pack & Hazardous Waste Management

- * Household Hazardous Waste Collection
- * Identification of Unknown Wastes

Remediation

Emergency Response Waste Transportation and Disposal Services

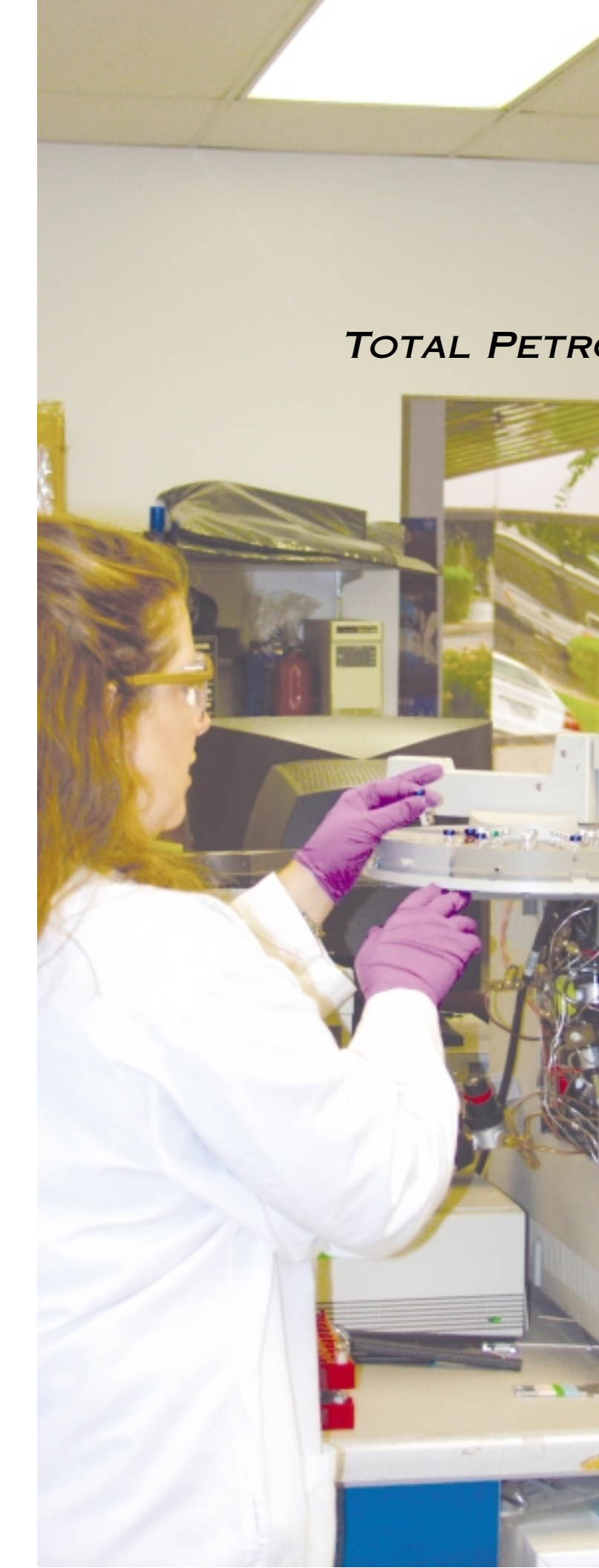
- * Roll-off Bins
- * Vacuum Tankers
- Site Decontamination
- Industrial Cleaning
- * Air-moving
- * Jet Rodding
- * Hydroblasting

www.contractpssc.com

Email: FSanchez@contractpssc.com



PHILIP TRANSPORTATION
& REMEDIATION
1801 West Watkins
Phoenix, AZ 85007
Telephone: (602) 252-1185
Fax: (602) 254-8305
Arizona ROC100177



TESTING FOR TOTAL PETROLEUM HYDROCARBONS

Common methods of analysis
and what to consider when
choosing an analysis method

by Julie Slocum Hoskin

Total petroleum hydrocarbons (TPH) is a term used to describe a group of compounds that come from crude oil. Crude oil is used to make a wide variety of petroleum products: gasoline, diesel, jet fuel, mineral spirits and kerosene to name only a few. TPH is the term that we have come to know that represents, as a whole, the multitude of individual compounds within these products. Some chemicals that may be found in TPH are hexane, benzene, toluene, xylenes, naphthalene, and fluorene. All of these chemicals or compounds are made up almost exclusively of two elements, hydrogen and carbon, from which the name hydrocarbon is derived. These two elements can be combined in an infinite number of combinations, each which makes a different compound or chemical. The number of carbon atoms in the molecule help to define characteristics such as boiling point and molecular weight which are key in the analyses of hydrocarbons. Hence, you will often see the number of carbons listed when speaking of hydrocarbons. Both hexane and benzene are C6 compounds because they each contain 6 carbon atoms. Because there are so many different chemicals in all the petroleum products that come from crude oil, it is not practical to measure each one separately. However, it is useful to measure the total amount of TPH within a sample

WHO NEEDS TO TEST FOR TPH?

You may need to test for TPH if you are characterizing waste, have an AZPDES/NPDES permit, or if you are cleaning a site to meet SRLs.

From an analyses standpoint, there are many names and faces that are used to describe variations on a similar theme that are lumped into the category of TPH. A few that might be familiar to you are: oil and grease, total recoverable petroleum hydrocarbons (TRPH), gas range organics (GRO), diesel range organics (DRO), oil range organics (ORO), and petroleum hydrocarbons (PHC). All of these are commonly considered

PHOTO: Julie Slocum Hoskin demonstrates loading TPH 8015AZ samples on a Gas Chromatograph (GC) autosampler.

TPH, but some are different fractions of TPH and different methods are commonly used in their analyses.

The analysis needed when measuring TPH is completely dependent on the regulating body and the final use of the data. For example, 8015B is a method from SW-846, or a "solid waste" method and is typically used for characterization of soil and groundwater monitoring. It is extremely common to see variations of this method referenced as 8015 Modified, which indicates there have been slight deviations from the letter of the method. The basic premise is the same though, TPH run on a Gas Chromatograph, with a Flame Ionization Detector (FID) with carbon ranging somewhere from C4 through C40. In the spring of 1998 the Arizona Department of Health Services and the Arizona Department of Environmental Quality, along with commercial and private laboratories, using the Environmental Laboratory Advisory Committee (ELAC) as the forum, developed a standardized 8015 method including carbon ranges, hold times and extraction procedures. This method is called 8015AZ and is written specifically for soil and replaced 418.1AZ, which was a modification of the wastewater method 418.1. The method was revised in the fall of 1998 and is called 8015AZ R1. The carbon range for the DRO/ORO portion is C10-C32 and was designed to match the Arizona Soil Remediation Levels (SRL), which defines TPH as C10-C32.

Typically 413.1, 413.2 and 418.1 are wastewater methods and used when measuring TPH in water. The use of Silica Gel with 418.1, which removes the polar compounds or animal fats, is the primary difference between the oil and greases, 413.1 and 413.2, and 418.1. These methods all use Freon for extraction. The production and use of Freon has recently been banned by the EPA, so a new method has been developed and is in the process of being promulgated by the EPA. Announced recently, laboratories are no longer exempt from the Freon regulation spurring a need to expedite the establishment for a replacement wastewater TPH method. 1664 is being widely accepted as the predecessor to 413.1, 413.2, and 418.1. It uses Hexane as the extraction solvent rather than Freon. Effective on February 1, 2000, the industries within the city of Phoenix are



Corey Schrader operates test equipment in the Del Mar lab.

no longer required to perform sampling for Total Petroleum Hydrocarbons. The regulatory limit of 100mg/l has not changed and the industries have to maintain compliance for TPH, but are not required to sample. It has not yet been determined if 1664 will be the new replacement method for the City of Phoenix. Most of the other municipalities within the state still utilize 413.1 or 418.1 as a TPH methodology.

In closing, to decide what method you need for analyzing TPH, keep this information in mind. Is the matrix water or soil? Is it for a AZPDES permit or is it to comply with SRLs? What state am I sampling in? Do I have other results I am comparing? All of this will help you and your laboratory in determining the most appropriate method.

Julie Slocum Hoskin is Sr. Account Manager at Del Mar Analytical. Julie can be reached at 480-785-0043, or by email at julie@dmalabs.com.

TPH ANALYSIS METHOD TABLE

METHOD	DESCRIPTION	ANALYSIS TECHNIQUE	TPH FRACTION
413.1	TPH as Oil and Grease (Freon)	Gravimetry	Weighs all extracted H-C residue
413.2	TPH as Oil and Grease (Freon)	Infrared (IR)	Measures wavelength of all extracted H-C bonds
418.1	TPH or Total Recoverable Petroleum Hydrocarbons (Freon and Silica Gel)	Infrared (IR)	Measures wavelength of all extracted H-C bonds
1664	TPH as Hexane Extractable Materials (HEM)	Gravimetry	Weighs all extracted H-C residue
8015B/Mod./AZ GRO	TPH as Gas Range Organics	GC/FID-Purgeables	C6-C10
8015B/Mod./ AZ DRO*	TPH as Diesel Range Organics	GC/FID - Extractables	C10-C22
8015B/Mod /AZ ORO*	TPH as Oil Range Organics	GC/FID Extractables	C22-C32
TNRCC 1005 (Texas)	TPH as Petroleum Hydrocarbons	GC/FID	C6-C28

**8015AZ DRO and ORO are analyzed using the same run. They are quantified separately, and then totaled.*

ASSOCIATIONS PAGES

Editors note:

Arizona's many environmental associations provide a path for communication and education in the EH&S community. Among other benefits, they provide networking opportunities, educational resources, and keep members informed on professional news and technical advancements. Many of these resources are available to both members and nonmembers, so always look to these associations when you need assistance.

If your organization is not represented here, and you would like it to be, please call us. Being a part of the Associations Pages benefits both the organizations and the readers, most of whom belong at most to a only a few of the organizations, but still would like to keep current on all environmental activities.

Editor

AAI

AAI's EHS COMMITTEE
BREAKFAST MEETINGS RESUME
SEPTEMBER 8TH

FOR MORE INFORMATION GO TO
AAI'S WEB PAGE AT [HTTP://WWW.AZIND.ORG](http://WWW.AZIND.ORG)

AAI is pleased to announce its second annual Energy Summit which will be held on Tuesday November 16th. This year's conference will address a number of important energy issues including generation, transmission, capacity, distribution etc. Please mark your calendars and plan to attend. Please contact AAI offices at 602-252-9415 for more information.

*Jeff Homer,
EHS Committee
Chairman*



AAI's monthly Environment Committee breakfast meetings will resume on September 8th. These breakfast meetings are held on the second Wednesday of each month at the Sheraton Phoenix Airport Hotel, 1600 South 52nd Street in Tempe. Breakfast is served at 7:00 AM. The Environment Committee also maintains a number of subcommittees that meet regularly to discuss environmental issues associated with manufacturing and industry. These subcommittees include Air, Water and Waste and Remediation. These subcommittees are chaired by Roger Ferland, Katy Brantingham and Barton Day respectively. Please contact the subcommittee chair or Jeff Homer at 480-441-6672 for further information.

ACHMM THUNDERBIRD



We want to congratulate the following EHS professionals: Kenneth Ashe (Fluor), Matt Jacobs (RM Cat), Holly Land (Jason Assoc.), Lloyd Wundrock (U of A), and Lori Zito (URS). These five passed

the CHMM certification exam after our CHMM Overview Course in April and are now Certified Hazardous Materials Managers!

We'll be offering the course and exam again next April. Be sure to get your applications in early. You'll need plenty of time to apply and prepare for the exam! Information about CHMM certification is available through our website: www.thunderbirdchmm.org

Speaking of the website, the Thunderbird Chapter website was awarded the 2004 ACHMM Website of the Year! Thanks and congratulations to Mary Klinginsmith, the creator and resident webmistress for the website!

Upcoming events: Regular monthly meetings are held at 6:00 PM, Old Spaghetti Factory, 1418 N. Central Ave., Phoenix.

● August 2-4, 2004 ACHMM National Conference in Las Vegas, NV

● September 1, 2004 Monthly meeting: Overview of highlights from the National Conference (tentative)

● October 6, 2004 Monthly meeting: Barton Day (Bryan Cave) will be relating his experiences dealing with post-Gulf War environmental issues in Kuwait

*Chuck Paulausky,
Chapter Secretary*





*Barry Westerhausen,
Sergeant at Arms*

The Arizona AESF would like to welcome all who are interested in metal plating, metal finishing, surface cleaning, metal

coating or those interested in environmental issues that effect industry to meet with us the second Thursday of each month (dates subject to change, please call to confirm). Meeting begin with social hour at 5:28 PM and Dinner at 6:28 PM, discussion following. Topics planned for the 2004 are environmental regulations, hazardous waste, new processes, EPA regulations, and plating trends. Past meetings in 2004 have been on EPA evaporator requirements, ADOSH meeting with Patrick Ryan on how to avoid compliance violations, joint meeting with NAME, metal plating shop incidents and responses. Please join us at our next meeting September 9th; you do not need to be a member to attend.

If you would like to be notified of upcoming AESF events and receive our news letter or have your business/business card listed on the news letter please call or send an e-mail to Barry Westerhausen at bwesterhausen@lachim.com (480) 206-4107 or Mark Thede at markthede1@cox.net (480) 695-4344.

Meetings are held at the Doubletree Resort in Phoenix, Van Buren and 44th Street.

AESF



2004 ARIZONA AESF SPEAKER AND EVENTS LINE UP:

**JUNE 12TH- AESF GOLF
TOURNEY AT COLDWATER GC
(GREAT TURNOUT)
AUGUST 3RD - ANNUAL AESF
DIAMOND BACKS GAME
SEPTEMBER 9TH - TBD**



*Paul Plato, R.G.,
President*

The Arizona Hydrological Society cordially invites you to attend our 17th Annual Symposium to be held at the Radisson Hotel City Center in downtown Tucson, September 15 – 18, 2004. The Symposium is the premier event in the southwest for hydrology and water resources science, engineering, and public policy. This year's theme is "The Value of Water." Plenary speakers are Gary Wolff from the Pacific Institute and Janie Chermak from the University of New Mexico. The Symposium will feature three concurrent sessions, plus poster presentations. AHS Symposia are well known for providing time to get reacquainted with colleagues and keep abreast of industry goods and services.

AHS is offering three workshops on September 15th: The Risky Business of Communicating Environmental Information to the Public, Aquifer Test Analysis Featuring AQTESOLV™, and Application of Isotopes to Common Hydrologic Problems. AHS is also offering three field trips on September 18th: Kartchner Caverns – Cave Hydrology; The Hydrology, Rangeland Ecology, and Wine of Upper Cienega Basin; and Fire Hydrology and Sky Island Ecosystem of the Santa Catalinas.

ARIZONA HYDROLOGICAL SOCIETY



FOR MORE INFORMATION,
PLEASE VISIT THE AHS WEB SITE:
[HTTP://WWW.AZHYDROSOC.ORG/
SYMPOSIUM.HTML](http://www.azhydrosoc.org/symposium.html)

**US GREEN
BUILDING COUNCIL
ARIZONA CHAPTER**



The U.S. Green Building Council has remained busy over our long, hot summer! We just finished our educational programs at the Southwest Sustainability Expo that was held August 5th through 7th at the NAU Campus in Flagstaff.

*Charlie Popeck,
Vice President*



The annual Green Building Expo sponsored by the cities of Phoenix and Scottsdale will be held at Phoenix City Hall on October 1st & 2nd. Our Green Building educational programs will include LEED for Existing Buildings, Commercial Interiors, and The Costs and Benefits of Green Buildings. We will also conduct a round table discussion about the challenges that project teams have encountered while designing and building green projects in Arizona.

Information on the expo can be obtained at www.scottsdaleaz.gov/greenbuilding. We hope to see you there!

**SEMICONDUCTOR
ENVIRONMENTAL
SAFETY AND
HEALTH
ASSOCIATION
(SESHA)**

As *the* premier Global Semiconductor Environmental, Safety and Health professional association, SESHA's Mission is to provide industry solutions via the education and development of our members, promote the sharing of ESH information and experience, and to manage a fiscally responsible association.

*Kim Smieja,
President*



The Arizona Chapter of SESHA meets for professional education sharing quarterly and holds a yearly two-day mini-conference. The next AZ SESHA Chapter meeting is September 9th from 2-5pm at the Dobson Ranch Inn in Mesa, Arizona and the AZ SESHA mini-conference with a theme of "Emerging EHS Technologies and Issues" will be held in Arizona in November. All are welcome! Please contact Kimberly Smieja at kimberly.smieja@intel.com or Tim Jones at timothy.jones@onsemi.com for additional information on Arizona SESHA, chapter meetings or the November mini-conference.

Membership in SESHA offers members benefits such as professional development, networking and career opportunities; discounts on SESHA conferences and events; access to our members-only web portal (www.seshaonline.org) for conference proceedings, membership directory, our new e-Journal, and much more!

To join SESHA, log on to www.seshaonline.org.

AZ ELM



WWW.AZELM.ORG

"Summertime and the living is.....hot!"

The AZELM board of directors has been on hiatus for most of the summer. Behind the scenes, however, work on revising the organizations bylaws is underway, as well as discussions for future programs and activities.

Stay tuned for more details!

*Vi Brown,
Treasurer*





Larry Olson, PhD.

IT'S ALL ABOUT CHEMISTRY **PARTICULATE MATTER**

Particulate matter (PM) differs from other regulated air pollutants. Unlike carbon monoxide, ozone, nitrogen oxides or sulfur oxides, in which the chemical composition is defined, particulate matter can be either solid, liquid, or a solid core surrounded by liquid and can vary greatly in size and shape as well as in its composition. There are natural sources of particulate matter including sea spray, volcanic emissions, pollen and wind blown dust but also anthropogenic sources such as power plant emissions, traffic, construction and agriculture.

The primary means of dividing particulate matter is based on size. Particulates range over five orders of magnitude in diameter, from about 1 nm to 100 μm . Anything smaller than this is molecular in size and larger particles cannot stay suspended in air for days or weeks. Accurately measuring the size distribution of particulates is a challenging technical problem but is important in devising control measures.

The first air pollution standards in the U.S. for airborne particulate matter (PM) were promulgated in 1971 for Total Suspended Particulates (TSP). This refers to ambient PM up to about 25 – 45 μm . Some countries in Eastern Europe, Asia, and Latin America still base their particulate standards on TSP. But evidence has accumulated over the last 20 years that the smaller fractions of particulate matter are more injurious to human health. In 1987, the EPA revised the National Ambient Air Quality Standards (NAAQS) to control PM_{10} rather than TSP. PM_{10} means particulate matter ≤ 10 microns in size. A $\text{PM}_{2.5}$ standard was added by EPA in 1997, with final attainment/non-attainment designations due by December 2004.

Another way to describe particulate fractions is to use the terms coarse, fine, and ultra-fine. The $\text{PM}_{2.5}$ fraction (particles $\leq 2.5 \mu\text{m}$) is called fine. The coarse fraction refers to inhalable PM_{10} particles that remain when the fine fraction ($\text{PM}_{2.5}$) is removed. In other words, coarse is the $\text{PM}_{2.5-10}$ fraction. Ultra-fine particles are less than 0.1 μm in size. There are currently no air pollution regulations that focus on ultra-fines. Fine particulates can have atmospheric lifetimes of days to weeks and can travel thousands of kilometers whereas coarse particulates remain suspended only minutes to hours and travel less than 10 km. Thus, the effects of coarse particulates are much more localized near the source.

Not only is there a size difference in coarse and fine PM, but the origin and chemical composition is usually different. Mechanical processes involving break-up of larger particles or bulk material produce mainly coarse particles, with similar chemical composition to the bulk material. These are called primary particulates and many times can be traced to a given source. However, the fine fraction is formed by combustion processes, coagulation, or condensation of gases on particles. These are designated secondary particulates and they can contain material from many different sources. Particulate organic matter, especially, is poorly characterized, and can be composed of hundreds of different compounds. Organic content in $\text{PM}_{2.5}$ can range from 10 to 70% of dry weight and inorganic matter can include heavy metals, sulfates and nitrates.

The impact of particulate matter on human health has only recently received the attention that has been paid to other air pollutants. In the next issue we will look at some of the toxicological effects of PM.

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

SAEMS



VISIT OUR WEBSITE AT
SAEMS.ORG

SAEMS MONTHLY LUNCHEON
MEETINGS HELD ON THE LAST
WEDNESDAY OF THE MONTH
START AT 11:30 A.M. AT:

THE MANNING HOUSE
450 W. PASEO REDONDO
(NORTH OF CONGRESS ON
GRANADA)
TUCSON, AZ

LUNCHEON TOPICS:

JULY: CAT SCHLADWEILER,
MALCOLM PIRNIE,
OPTIMIZATION OF A LONG-
TERM MONITORING PROGRAM

AUGUST: GARY HAYES, NEW
PAG EXECUTIVE DIRECTOR, ON
THE REGIONAL
TRANSPORTATION AUTHORITY

SAEMS' fiscal year started June 1st, and with new Executive Committee officers installed at the annual meeting there isn't a minute to spare to continue working towards the organizations goals.

Frank Bonillas,
President



Many dedicated members worked hard this past year to accomplish so much! It will be hard to fill the out-going Board's shoes. However, the new Board members and Committee chairs met recently to lay down the foundation for the upcoming year. Of course we will all continue to support existing projects, but we will be taking advantage of some exciting opportunities. Some of the goals discussed include incorporating more emphasis on Health & Safety issues into current activities, improving member services, expanding the focus of the Education Committee, and work on bringing a Gatekeeper Conference to Tucson. And much more!

Whether this year will turn out to be as successful as last year will mostly depend on member participation. Therefore, I encourage everyone to get involved.

Please help me welcome the 2004-2005 Executive Committee: Michelle Freeark, President-Elect; Monette Greer, Vice President; Bob Estes, Secretary; Cynthia (Syndee) Wundrock, Treasurer; and Pamela Beilke, Communications Coordinator.

VALLEY FORWARD



VALLEY FORWARD PRESENTS
24TH ANNUAL
ENVIRONMENTAL EXCELLENCE
AWARDS PROGRAM

Valley Forward Association will present the 24th annual Environmental Excellence Awards program on September 17 at The Hyatt Regency Scottsdale at Gainey Ranch. More than 700 business and civic leaders are expected to attend the program, which is Arizona's oldest and largest environmental competition.

Diane Brossart,
President



Presented in partnership with SRP, the awards will recognize significant contributions to the environment in 20 categories, including; buildings and structures; site development and landscape; art in public places; environmental technologies; environmental education/communication; environmental stewardship (SRP Award); and livable communities.

It is imperative that we take steps to ensure the livability and sustainability of our Valley communities in the face of unprecedented growth. To remain competitive, we must offer a living environment comparable or superior to the most appealing cities in the country – that's what this program is all about.

Reservations are being accepted online at www.valleyforward.org or by calling (602) 240-2408.



Eddie Martinez,
President

July's EPAZ meeting featured Rob Davis, Founder, owner and President of Forest Energy Corporation, Show Low, AZ and Forest Energy Systems, Albuquerque, NM.

Mr. Davis has been manufacturing wood pellet fuel from wood residues since 1992. The company is currently utilizing 8 – 10 semi loads per day of residues from forest thinning operation plus by-products of most other wood manufacturing in the area to create a refined wood fuel. They are actively developing sustainable heating and cooling systems utilizing renewable pellet fuel for commercial and industrial applications.

September's meeting will feature Doug Kobrick; he will discuss water audits for water conservation efforts.

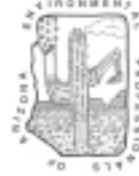
A special thanks for everyone who supported our EPAZ fund fundraiser at Diamondbacks Vs Dodgers baseball game, we were able to sell 100 tickets and the Diamondbacks donated \$200.00 towards our scholarship fund. Everyone who attended had a great time.

FORD: DRAFT REVISIONS TO APP RULE *CONTINUED FROM PAGE 20*

their tributaries, must submit their NOI, as well as their storm-water pollution prevention plan ("SWPPP"), for ADEQ review at least 32 days prior to discharging. The SWPPP "must specifically identify BMPs and/or other controls that will minimize discharge of pollutants," and "include a proposal for monitoring to determine if BMPs and controls are effective." The proposal then allows ADEQ to notify an applicant that it must revise its SWPPP to further minimize discharges, and gives ADEQ the authority to "require that specific controls or monitoring be implemented or specific BMP design criteria be followed." Similar procedures were promulgated by ADEQ under the construction general permit for storm water discharges issued in February, 2003. Nonetheless, these proposed provisions significantly expand ADEQ's authority over industrial storm water dischargers with regards to mandating specific storm-water controls, and add a significant new potential delay element. In addition, it is not clear whether or how such procedures would apply to existing facilities, already covered under the existing AZPDES MSGP.

Those familiar with the current MSGP can appreciate the length and complexity of the permit language, which provides fertile ground for discussion. Of particular concern, however, are changes proposed by ADEQ that would render ADEQ's new permit more stringent than the current AZPDES MSGP. It is anticipated that discussions with ADEQ will be ongoing over the next few months until ADEQ decides on a draft permit. The comments of all affected parties are valuable and welcomed. Anyone interested in getting involved in the process need not wait until the draft permit is formally published by ADEQ. Please send me an e-mail if you would like additional information.

EPAZ



JULY 28 - NETWORKING MIXER, KEG
STEAKHOUSE & BAR, CHANDLER,
FASHION CENTER

NO MEETING IN AUGUST
AUGUST 25 - NETWORKING MIXER,
CARLSBAD, SCOTTSDALE

VISIT OUR WEB SITE AT [HTTP://
WWW.EPAZ.ORG](http://WWW.EPAZ.ORG) FOR MORE DETAILS
REGARDING UPCOMING MEETINGS AND
OUR MONTHLY MIXER LOCATION OR
CONTACT ME AT (480) 961-1300
X181.

LOWN & HILLEMANN, PLC ATTORNEYS AT LAW

Free initial consultation and discount rates for small business clients

- ◆ Small Business Organization ◆ Business & Personal Litigation
- ◆ Estate Planning (Wills & Trusts) ◆ Employment & Labor
- ◆ Aviation Enforcement Actions

OFFICE LOCATIONS:

2659 West Guadalupe Road, Suite C118
Mesa, Arizona 85202
(602) 228-3098

9425 South Main Street
Jonesboro, Georgia 30235
(404) 520-0171

GUEST COLUMN



David L. Kirchner
President and Founder of Basin
& Range Hydrogeologists, Inc.

WATER FROM OUR OCEANS

Well, it's about time to start harvesting our planet's oceans to augment Arizona's municipal, domestic, industrial, and agricultural water supplies. Either we do that, or we must advance our *Diamonds-Are-Forever* drilling bits to greater depths within the great continental mass.

The geologist in me wants to dig deeper water wells, as thus far our civilization has only scratched the surface of Earth's thick crust. Because there are vast amounts of "surface" water in our oceans, and because the clown fishes and plankton can't drink it all, it probably would make much more sense to tap into these huge reservoirs. Cheap and abundant supplies of solar energy would be quite useful for the desalination and purification processes, including the treatment and re-use of the extensive by-products.

I believe that Arizona's proven water supplies — groundwater, surface water, and reclaimed water -- will be in abundant supply for another couple of decades, in spite of climatologists warnings that this regional drought could annoy us for an additional 15 or 20 years! Beyond the next two decades, I predict that water politics and water supply issues in Arizona will become quite chaotic. Therefore, I recommend that we try to avoid this future crisis and start suckin' water from the oceans. Wall Street investment bankers really love the kind of lengthy investment period that this long drought cycle provides for a free market economy.

Unfortunately, the entire Western United States is being inundated with throngs of water-thirsty people moving into the territory from everywhere. This enormous and growing demand for clean water in the Western United States is exerting hidden pressures on arid Arizona.

The serious challenge that I foresee, while Arizona tries to grapple with its pending water supply crisis, is that everybody seems to be a seasoned water expert. Each one of us has strong opinions about what Arizonans should or should not be doing to accommodate the drought and the unstoppable population explosion. Some people (non golfers) argue against building any more golf courses. Some are pushing relentlessly for new forest management and Draconian water conservation measures. The so-called Five Star resorts and the two-bit motels are begging their guests to sleep on their bed sheets and pillowcases twice and to hang-up their bathroom towels after taking their 300-gallon steaming hot showers.

Of course, all this will change when, instead of (or in addition to) having rolling electrical blackouts due to energy shortages and transmission failures, Arizona faucets blow hot air, lawn grasses turn UPS brown, and SUVs look filthy dirty.

To steal a phrase, "**It's the life style, stupid!**" Have you ever driven along the wide Arizona boulevards, especially in Maricopa and Pima Counties, and noticed how many cars and giant SUVs are absolutely sparkling clean. It's truly amazing! There are millions and millions of clean-looking cars in Arizona. In fact, I would be willing to bet Dr. Nick Hild's straw hat that there are more clean cars in Arizona than there are clean people. But that's a topic for another column.

Back to our oceans. The technology for saltwater purification is here. It's just a matter of matching the economics. And make no mistake about it, water is a commodity! Dr. Nick was right when he said, "**It's the money, stupid!**" However, if you believe that treatment of ocean water is less expensive than cleaning-up groundwater, or reclaiming wastewater, you could be wrong. Unfortunately, people have been dumping wastes into the oceans for thousands of years. Each year, our rivers and streams and wastewater treatment plants discharge hundreds of millions of tons of chemicals into our oceans. These so-called ocean outfall systems are like giant toilets flushing into the seas day in and day out. Watch out Nemo!

If you want to invest your extra cash, then I would suggest that you put your money into the stocks of companies that are now developing economical means of treating and transporting ocean water. The returns on your investments might be enough to play many rounds of golf on green greens and lush fairways. There are a lot more efficiencies and productivity gains to be squeezed out of our water markets, but if I were you, I would not wait too much longer before investing in our oceans -- a great opportunity for potential new wealth.

Finally, one last thought for you to ponder until receiving your next fine issue of *the Journal of Environmental Management*: According to some experts on the subject of global warming, our ocean levels will rise dramatically, and we will have new ocean-front properties to develop. **Location! Location! Location!**

David Kirchner can be reached at 602-840-3333 and by email at kirchner@basin-and-range.com

If you would like to contribute a guest column, please call the Journal Editor at 480-422-4430 x42.



(PART THREE OF THREE)

SUSTAINABILITY AND SUSTAINABLE DEVELOPMENT: SUSTAINABLE PERSONAL TRANSPORTATION FOR THE FUTURE

Nicholas R. Hild, PhD.

In the last column (June/July, Part 2), I discussed the problems our domestic auto makers are facing with foreign auto makers already cornering the market for alternatively fueled vehicles; here's the last installment on that discussion...

I mentioned cool *hybrid cars* getting kudos from the millennial crowd at Detroit this year, but Joe Sixpack, (guys like me) love big powerful V-8 gas-and-diesel burning *trucks*, too! Nowadays, though, it may take more than big horsepower motors to keep today's youthful buyer who wants both power *and* fuel-efficiency in the same package, from looking at full-sized hybrid *trucks* like the one Toyota showed at the big coming-out party. And it's only a matter of time until hybrid pickup trucks are available to the mass market. Even GM has a prototype (GMC) pickup that's a hybrid, just waiting to see how Toyota (*non-hybrid*) truck sales are affected by racing their trucks with those good old NASCAR truck circuit boys in 2004.

Right now, our domestic Big Three are "Oh for three" in hybrid cars or trucks. Like Jesse James of Monster Garage says when he gets a freebee, "...they have *Zero*. Nada. Nothing. The Big Three have no hybrids at all to offer unless you consider the Partial Zero-Emission Vehicles (PZEVs), which the Big Three say are *better* than hybrids because PZEVs, like the Ford Focus, actually produce lower levels of emissions than the hybrids. The trouble is, in order to meet EPA emissions requirements, PZEVs need to have a steady diet of low sulfur fuels, (spell that '*unsustainable*' f-o-s-s-i-l) most of which is not available outside California. The other problem is, what twenty-something guy or gal is going to think that driving a Ford Focus is cool? Attracting the go-fast crowd that make up a significant dollar share of the SUV market is not likely to happen with PZEV's and, the Big 3 know it. Remember: **It really *IS* the money, stupid!**

Buyers have been lining up for the Toyota Prius and Honda Civic hybrids and Ford says they have 30,000 buyers in line for next year's Escape Hybrid, although they only plan to build 20,000. GM delivered the "partial-hybrid" GMC to government and business fleets for "testing" and Dodge has a similar model in the works. Domestic automakers lobbied Congress to get the current tax credits to go away, because the current breaks subsidize foreign automakers. So, what the auto makers want, and what Big Oil politicians know is needed now, is a tax break that is specific for the types of alternatively fueled cars *American* car makers are trying to bring to the marketplace. If that's unfair to the foreign competitors, they don't care. After all, its *American* jobs we're talking about, they say. Tax breaks for foreign auto makers are...well, they're just *un-American!*

You can argue with the numbers and even the motives, but it is hard to deny that the political power base is awash in big oil. We fought two wars in the last decade under the misguided premise that securing our rights to middle-eastern oil would continue an assured supply of it. But, that's certainly not a sustainable way of doing business. It has cost us dearly in both blood and dollars so, isn't it time to remind our politicians they were elected to represent us (and not Big Oil) and fighting more wars was NOT the platform they were elected on. How many more excuses must we hear before we realize that the ultimate price will be paid by our children's, children's, children?

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

LEGAL NEWS YOU CAN USE

REGULATORY DEVELOPMENTS

ADEQ UNVEILS DRAFT REVISIONS TO APP RULES

Michael C. Ford, Attorney



As discussed in the last issue, ADEQ is in the early stages of revising its aquifer protection program permit rules. ADEQ is also in the process of developing a new storm water discharge permit for industrial facilities, modeled on EPA's Multi-Sector General Permit ("MSGP"), the latest version of which has been in effect since October, 2000, and which is set to expire in October, 2005. The new permit will eventually replace EPA's MSGP for Arizona permittees. As with the APP program revisions, interested stakeholders should take advantage of the opportunities to get involved early on in the rulemaking process.

With the delegation of NPDES permit program authorization from EPA to ADEQ in December 2002, EPA's MSGP was "converted" into an AZPDES permit. Therefore, the MSGP and its basic terms continue to apply to Arizona permittees, with the notable exception of the conditions for compliance with requirements regarding endangered species and historic properties. ADEQ and an industrial stakeholders work group have been in communication over the last few years to develop a permit more tailored to Arizona conditions. Discussions have recently picked up, and it is anticipated that informal discussions will continue until ADEQ formally publishes the draft permit for public notice and comment. As discussed below, several important issues of concern to industrial permittees have arisen to date, which are likely to garner significant discussion during the informal, as well as the formal, public comment process.

The MSGP authorizes the discharge of certain types of non-storm water, such as potable water, uncontaminated groundwater, cooling tower mist, and irrigation drainage. The stakeholder work group has suggested the inclusion of several other common types of non-storm water discharges, including dust control water. Dust control is an important issue in Arizona due to climate and air quality concerns, and dust control measures are often required under other permitting programs, particularly those that are construction-related. EPA has in fact endorsed dust control as a Best Management Practice for the prevention of storm water pollution. While dust control water typically may not be applied during a storm, or actually be discharged, due to inherent weather uncertainties, the risk of dust control water commingling with storm water discharges warrants the specific inclusion of dust control water as an allowable non-storm water discharge (assuming, of course, that the dust control water otherwise meets all other applicable requirements). And there is solid precedent for authorizing dust control water discharges: Arizona's construction general permit for storm-water discharges specifically allows "water used to control dust, provided effluent or other wastewaters are not used."

ADEQ has also proposed several controversial coverage limitations. Specifically, ADEQ has proposed not to authorize "discharges that are inconsistent with any applicable Total Maximum Daily Load ("TMDL") established for the receiving water," and "discharges that do not comply with an applicable anti-degradation policy for water quality standards." The proposed provisions raise a host of complex technical and policy issues, and have been opposed at this point by the industrial stakeholder group.

ADEQ has also proposed special authorization procedures for discharges to "impaired" and "unique" receiving waters. For both types of discharges, permittees located within one-quarter mile of such waters or

Continued on page 17

Michael C. Ford is an Attorney with the Phoenix office of Bryan Cave, LLP, practicing environmental and occupational safety law. His practice is focused primarily on regulatory compliance advice and enforcement defense. He can be reached at 602-364-7417, or by email at mcford@bryancave.com.

NEWS BRIEFS

LAURA MALONE JOINS LFR LEVINE FRICKE

❖ Laura Malone has joined the Scottsdale office of LFR Levine Fricke. Laura has 15 years experience as an environmental professional. During her tenure as the Manager of the HW Inspections & Compliance Unit at ADEQ, she developed and implemented the RCRA program for Arizona. Laura's role will include performing environmental audits, with an emphasis on hazardous waste compliance issues. Laura can be contacted at 480-905-9311, or by email at Laura.Malone@lfr.com

LISA CULBERT ACCEPTS POSITION AT MCPHEE ENVIRONMENTAL SUPPLY

❖ Lisa Culbert recently accepted a position as Vice President of Marketing for McPhee Environmental Supply, LLC. According to McPhee, the company has provided quality spill control and spill containment products to our Arizona industries since 1995. A few years ago they began to diversify into the market of water and waste water filtration units. They distribute systems for the treatment of oily waters, petroleum products and the full range of organic chemicals, in addition to metals utilizing the technologies of MYCELX®, Metall:X™ and KeyleX™.

Recently McPhee entered into an agreement to distribute a new product. This product will be Lisa's main focus over the next few years. McPhee has exclusive distribution rights to a filter media developed by SolmeteX for the treatment of Arsenic in drinking water called As:X^{np}. All drinking water systems within the United States are

being required to be compliant with the new Arsenic standard of 10 parts per billion (ppb) by January 23, 2006. The new level is significantly lower than the current level of 50 ppb and the ADEQ has identified over 400 systems that are impacted due to naturally occurring Arsenic within Arizona's groundwater. Several other states will be significantly affected as well by this Federal regulation.

As:X^{np} is a nano-particle selective resin, designed to remove arsenic (arsenate and arsenite) from water. This technology is a hybrid using qualities from both the ion exchange and adsorption treatment methods. As:X^{np} has a high adsorption capacity at 100,000 + bed volumes, excellent flow characteristics, utilizes an extremely durable media that is non-crushing and can with stand high operating pressure above 150 psi. As:X^{np} is a regenerable filter media which passes on a huge cost savings to its users. Due to this aspect of the product, McPhee is in the process of working with Conestoga Rovers & Associates (CRA) to design and build a regeneration plant in Phoenix. They hope to open the plant in the summer of 2005. Lisa can be reached at (602) 943-9565 or Mobile (602) 332-3174, and by email at lculbert@mcphee-env.com



Lisa Culbert,

McPhee Environmental Supply

MATLOCK GAS AND EQUIPMENT FINED FOR FAILURE TO FILE ANNUAL INVENTORY REPORTS

❖ The U.S. Environmental Protection Agency announced recently that they fined a Globe, Ariz. company \$15,679 for failing to report to the appropriate local, state and federal authorities the amount of propane its facility was storing from 2000 through 2003.

Propane distributor Matlock Gas and Equipment Company stored 143,000 pounds of the extremely hazardous chemical, and failed to file annual inventory reports with the state emergency response commission, the local emergency planning committee and the local fire department. Federal emergency planning and right-to-know laws require companies to report amounts of propane when they exceed 10,000 pounds.

The company will pay \$3,249 and spend \$12,400 on emergency response equipment for the Canyon Volunteer Fire Department. "This facility is near a residential area and has a responsibility to provide prompt and accurate information about the chemicals it is storing," said Keith Takata, the EPA = s Superfund Division director for the Pacific Southwest. "This new equipment will help the Canyon Volunteer Fire Department better respond to emergencies and protect the community in the event of a chemical release."

The EPA discovered the violations through routine surveillance of facilities in the area and in coordination with the Arizona State Emergency Response Commission.



2445 N. Coyote Drive, #104
Tucson, Arizona 85745
520 882-5880 Fax 882-9788
www.turnerlabs.com

TURNER LABORATORIES, INC.
Celebrating 20 Years in Tucson

- ♦ MBE/WBE/SBE Laboratory
- ♦ Waste Water Sampling Services
- ♦ Inorganic, Organic, Microbiological Analysis
- ♦ Drinking Water, Waste Water, Hazardous Waste Compliance Testing

ENVIRONMENTAL COMPLIANCE ASSURANCE PROGRAMS



Roger K. Ferland, Quarles & Brady, Streich Lang, LLP

Observations by
Roger K. Ferland,
Environmental Attorney,
on environmental
compliance assurance

by Dianne Frydrych

Roger Ferland has practiced in the areas of environmental and natural resources law in both the public and private sector since 1975. I recently asked Roger, "What is the greatest area of weakness that you have observed in most companies' environmental compliance assurance programs?" The following is his response:

In itself, the question raises two issues initially worth commenting upon.

The question refers to compliance assurance programs, not the more politically correct "environmental management systems." The latter is a concept that embraces everything from sustainable product development to waste minimization. While these are all admirable concepts, most companies simply lack the resources (or need) to adopt a full-blown environmental management system with all the ISO-mandated "bells and whistles." At a minimum, however, every company should have a systematic, structured mechanism for ensuring that it is consistently in compliance with environmental laws and that when noncompliance occurs, it is dealt with

immediately and, if required to do so, the noncompliance is reported to the appropriate regulatory officials.

A second preliminary issue is implicit in the term "compliance assurance program." By calling it a program, it is assumed that there are both written procedures covering its implementation and a single person assigned by the company to be accountable for that implementation. It is critical that the accountable person have the training, knowledge and experience required to make the program work. In the past companies assigned environmental compliance to a facilities manager or worker safety professional without training them or hiring the environmental expertise below them to carry out the assignment. In most companies that has changed, but not in all. Obviously, even the best compliance program is worthless if it is not implemented by people who know what they are doing.

That being said, a consistent problem that I have observed with even the most sophisticated, well-staffed compliance assurance program is complacency. Complacency in this context translates to failure to observe the obvious compliance problem because it is assumed that the "system" will invariably catch the problem. In other words, it is assumed that proactively looking for problems is unnecessary. This sort of breakdown is most likely to occur in complex regulatory programs like RCRA or the Clean Air Act in which a compliance problem can arise and fester for months before it is discovered. For example, the increased use of CEMs or other continuous direct measurement devices to determine continuous compliance has meant that a problem with software or an equipment malfunction may go undetected until a particular event triggers an inquiry, only to then discover that the emission levels relied upon for compliance assurance were not accurately being measured for days, weeks or even months.

DIVERSIFIED TRANSPORTATION, INC.
25 Years Experience in Waste Transportation

HAZ • NON-HAZ • Special Commodities
20 - 40 Yard Roll-Off Bins • LiftGate Logistic Vans

Partial or Full Loads
Call or Email Dianne Sholl
602-455-0350
DTlinPhx@aol.com

The antidote to complacency is the periodic compliance audit. Audits have gotten a bad rap recently because regulatory agencies have either denigrated their value or been unwilling to protect audit results from public disclosure. Moreover, the cost of audits are usually the first thing to go when there's corporate belt-tightening. However, an audit, even an internally-conducted audit, provides the fresh look at a plant's environmental performance that simply cannot be achieved by even the best compliance assurance program. Of course, the quality of the audit is only as good as the people that conduct it and many companies lack the internal sources to conduct their own audits. Nevertheless, even the cost of using outside professionals to perform the audit is relatively small when compared to the risk of allowing long-term noncompliance to remain undetected only to be found during an inspection by a regulatory agency or reported to that agency by a whistle-blowing employee.

I would close by noting that audits should be viewed as an enhancement to a company's compliance assurance program. They are not a substitute for such a program. Moreover, periodic audits make a good program better but will not save a dysfunctional program.

Roger K. Ferland is a partner with Quarles & Brady, Streich Lang, LLP, in Phoenix, and has practiced in the areas of environmental and natural resources law in both public and private sector since 1975. He may be reached at 602-229-5607, or by email at: rferland@quarles.com.

Dianne Frydrych is Marketing Manager at Legend Technical Services of Arizona, in Phoenix, an environmental laboratory. She may be reached at 602-324-6121, or by email at dfrydrych@legend-group.com



Del Mar Analytical
Providing Quality Environmental Laboratory Services



Featuring:

- Waste Analysis
- Customized Electronic Data Deliverables (EDDs)
- Standard 7 Day Turn Around Time
- Microbiological Analysis
- Web Report Delivery
- 1,4 Dioxane Analysis

9830 S. 51st Street • Phoenix, AZ 85044 • Phone: 480-785-0043 • Fax: 480-785-0851

Rogers
Consulting Services L.L.C.
4205 E. Camino de Palmas
Tucson, AZ 85711
(520) - 490-8380; (602) - 548-8272
Email: silverwitch@cielle.net

Member of
EPAZ AESF
NAME

Environmental Assistance
RCRA / Hazardous Waste; Air Quality; MACT Standard
Compliance; SARA Title III (EPCRA); Stormwater
Employee Training; Permitting

Chemicals and Equipment
IDOSELLCHEMICALS.COM
We Discount Equipment!
1-800-TWOIDSC

Julie C. Rogers, P.C.



Aegis Environmental Strategies

Expertise in Import and Export Compliance:
TSCA PMN's, LVE's, R&D submittals.
MSDSs, SDSs, and shipping labels for
U.S., EU, Canada, and Asia.

Expertise in implementing:
ISO 14001 and
Environmental Management Systems

Consulting services for
assuring compliance with:
**Environmental Regulations
OSHA Safety Programs
and Training
Hazardous Waste Management**



Greg Fisher
3305 E. Rock Wren Road
Phoenix, AZ 85044
gfisher@aegis-ehs.com
602-770-6961

Call today for an initial consultation - free to prospective clients



ACHMM THUNDERBIRD CHAPTER DINNER MEETING

JOE HOLMES, ROMIC ENVIRONMENTAL TECHNOLOGIES

SPOKE ON "TREATMENT
OPTIONS FOR HAZARDOUS
WASTE, A PRACTICAL
MANAGEMENT GUIDE."

JOE CAN BE REACHED AT 520-
796-6227, OR BY EMAIL AT
JOEH@ROMIC.COM.

There was an excellent turnout to hear Joe Holmes speak at the recent ACHMM Thunderbird meeting at the Spagettii Company in Phoenix, July 7, 2004. At least 25 members and visitors attended. Shown at left are a few of the many attendees.

PHOTO: Starting in the bottom left corner of photo are: Joe Holmes, Romic Environmental; Chuck Paulausky, CP Safety & Environmental; Julie Slocum Hoskin, Del mar Analytical; Kelly Kading, HDR; Jerry Fields, Brown & Caldwell; Matt Conway, Ping; Susan Wendt, Univar; Barbara Young, Univar; Barbara Pinkerton, Romic Environmental; Anthony Padilla, PSC; Tekla King, Brown & Caldwell; Andy Ewing, EPSI.

SA&B
Environmental & Chemical Consultants
Providing Practical Environmental Solutions

- Indoor Air Quality
- Mold Assessments
- Industrial Hygiene Services
- Environmental, Health & Safety Training
- Environmental Site Assessments and Remediation
- Regulatory Compliance & Permitting Services
- Asbestos & Lead-Based Paint Surveys
- Stack Emissions Testing
- Air Pollution Consulting

www.sab-env.com 602.263.0045

DEL MAR ANALYTICAL

PHOTO below: Tabitha Hauer, left, and Corey Schrader, right, operate testing equipment in the Del Mar lab. See related story page 8.



PROFESSIONALS PAGE

ASU ARIZONA STATE UNIVERSITY

**B.S. and M.S. in Technology
Environmental Technology
Management**

wEnvironmental Management
wEmergency Management
wInt'l Environmental Management

On-Line Option 480-727-1100

DrP@asu.edu www.east.asu.edu/ctas/imt/etm

**Carter
Affiliates, Inc.**
resources for the
environment

www.cartercare.com/care

- * Hazardous Waste Management
- * Pollution Prevention Programs
- * Environmental Consulting / Regulatory Support
- * Waste Reduction / Recycling Equipment
- * Compliance Audits / Training

(520) 323-1100
715 N. Belvedere Ave., Tucson, AZ 85711

**Environmental Compliance
Solutions, Inc.**

Create your entire Emergency Response Plan on-line, in a user-friendly, secure SSL, web-based environment. Be in compliance with local, state & federal emergency plan reporting requirements, while providing your EMERGENCY RESPONDERS with the most up-to-date, vital information about your facility. This modest investment could save your entire business. Visit our website at:

www.encompsol.com

Or, call us toll-free at
877.655.6952
for more information

**"PROVIDING VITAL EMERGENCY RESPONSE
INFORMATION IN THE 21st CENTURY"**

EDDIE MARTINEZ
www.eddiesellshomes.com
An Independent Member Broker

Bus.: (480) 759-4300
Fax: (480) 706-0000
Mobile: (602) 708-9179
Eddiem4241@cox.net
4621 E. Chandler Blvd Suite 100
Phoenix, AZ 85048

KELLER WILLIAMS
REALTY

"Personal Service With Integrity"

R. Bruce Scott, L.L.C.
Chemical and Environmental
Engineering Consultant

- * Phase I Environmental Site Assessments
- * Spill Prevention Plans (SPCC)
- * Storm Water Plans (SWPPP)
- * Hazardous Waste Investigations

R. Bruce Scott, P.E., Q.E.P.
5744 West Columbine Drive
Glendale, Arizona 85304-1835
rbruce.scott38@cs.com

PHONE (623) 979-3445 FAX (623) 878-6884

The Go-To People
for Web Sites, Graphics, Artwork and more...

**Graphics
outpost**

www.graphicsoutpost.com
Phoenix, Arizona
602.426.1712

CALENDAR

AZ ENVIRONMENTAL DATES, AUGUST 15, 2004, THROUGH NOVEMBER 15, 2004

AUGUST

- | | | |
|-------|----------------|---|
| 18-20 | AAI Env Summit | Prescott. AAI's annual env. summit at the Prescott Resort. See advertisement page 19. To register: 602-252-9415 |
| 25 | SAEMS Luncheon | Tucson. 11:30 AM at the Manning House, 450 W. Paseo Redondo. For info. see www.saems.org. |
| 25 | EPAZ Mixer | Scottsdale. Networking mixer at Carlsbad, Scottsdale. For info see www.epaz.org. |

SEPTEMBER

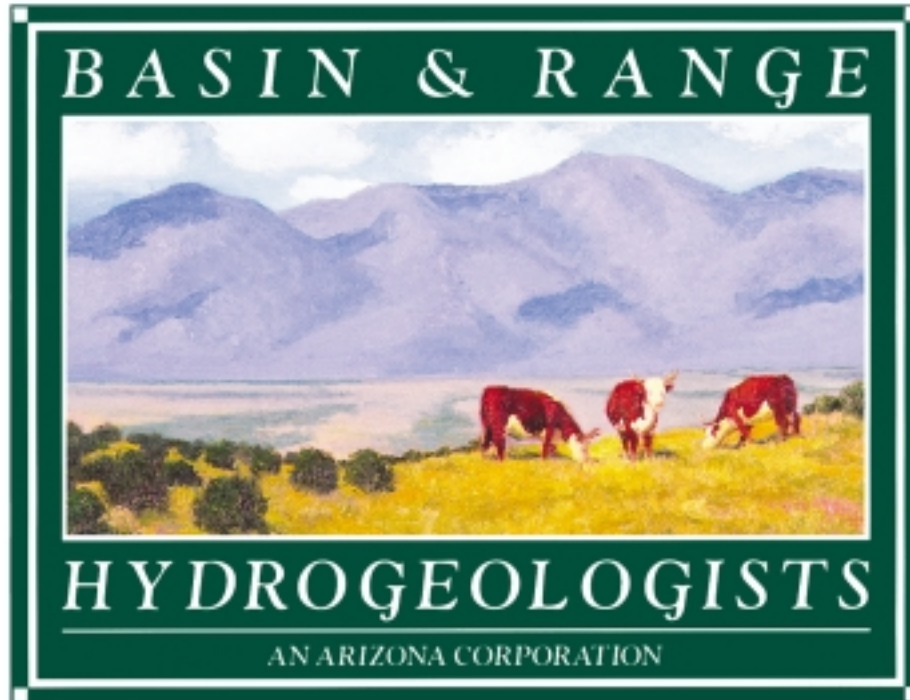
- | | | |
|-------|-----------------------------|--|
| 1 | ACHMM T-Bird | Phoenix. Dinner meeting 6 PM at Old Spaghetti Factory. For info: www.thunderbirdchmm.org. |
| 9 | SESHA Chapt. Meet. | Mesa. 2 - 5 pm at the Dobson Ranch Inn in Mesa. Contact Kimberly Smieja at kimberly.smieja@intel.com. |
| 9 | EPAZ Luncheon | Phoenix. 11:30 to 1 pm. Details at www.epaz.org. |
| 15-18 | AHS Symposium | Tucson. Annual Arizona Hydrological Society Symposium. For details see www.azhydrosoc.org. |
| 17 | 24th Annual Env. Excellence | Scottsdale. Valley Forward Env. Excellence Awards at The Hyatt Regency Scottsdale. Info: 602-240-2408. |
| 23 | EMS Workshop | Phoenix. 8:30 to Noon. Environmental Management Systems workshop. Sponsored by ADEQ. Contact Gail Bliss at 602-772-4212. |
| 24 | Greening Gov't Buildings | Phoenix. 8:30 - Noon. Sponsored by US Green Building Council-AZ Chapter and ADEQ. Contact Chuck Burke at 602-771-4207. |
| 24 | Greening Gov't Operations | Phoenix. 1:30 PM to 4:30 PM. Sponsored by City of Phoenix, Maricopa County SBEAP, and ADEQ. Contact Chuck Burke at 602-771-4207. |
| 29 | SAEMS Luncheon | Tucson. 11:30 AM at the Manning House, 450 W. Paseo Redondo. For info. see www.saems.org. |

OCTOBER

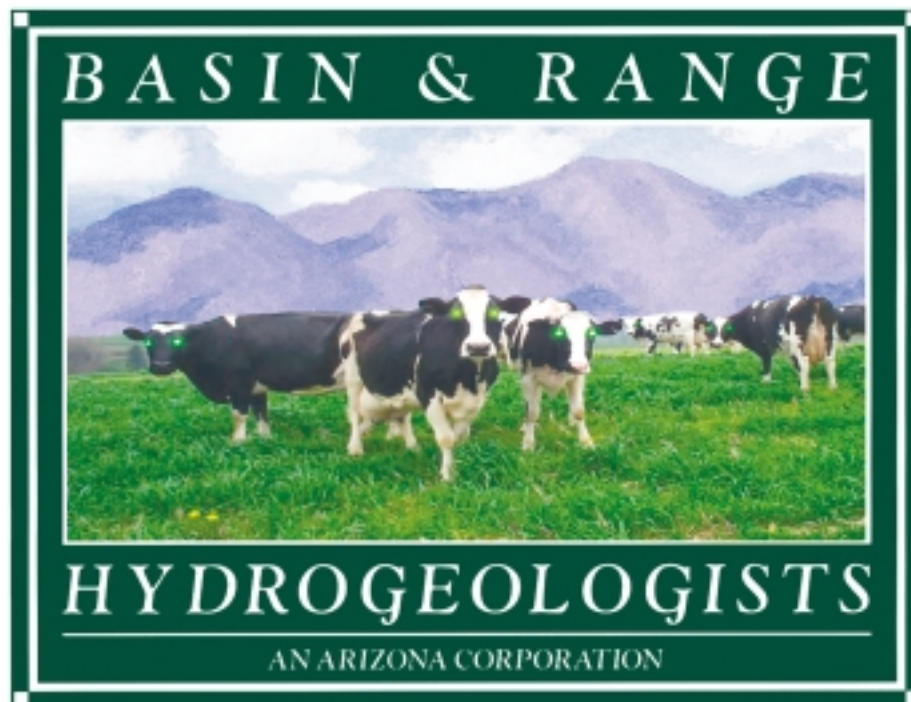
- | | | |
|----|----------------|---|
| 6 | ACHMM T-Bird | Phoenix. Dinner meeting 6 PM at Old Spaghetti Factory. Barton Day to relate his experiences with post-Gulf war environmental issues in Kuwait. For info: www.thunderbirdchmm.org. |
| 14 | EPAZ Luncheon | Phoenix. 11:30 to 1 pm. Details at www.epaz.org. |
| 27 | SAEMS Luncheon | Tucson. 11:30 AM at the Manning House, 450 W. Paseo Redondo. For info. see www.saems.org. |

NOVEMBER

- | | | |
|----|---------------|---|
| 1 | ACHMM T-Bird | Phoenix. Dinner meeting 6 PM at Old Spaghetti Factory. For info: www.thunderbirdchmm.org. |
| 11 | EPAZ Luncheon | Phoenix. 11:30 to 1 pm. Details at www.epaz.org. |



got contamination? *



*** If you have insurmountable contamination challenges, or if your cows have bright fluorescent eyes, then perhaps you should consider the value of retaining a good environmental attorney -- for example, someone like Roger.**