

# PCPG Newsletter

Communicating Key Information and Concerns  
to Geologists and Environmental Professionals

Issue 2 / 2022

## BOARD OF DIRECTORS

### President

Tiffani L. Doerr, P.G.  
Evergreen Resources Management Operations

### President-Elect

Vincent Carbone, P.G., C.P.G.  
HDR

### Past President

Barbara Dunst, P.G.  
Musser Engineering, an EARTHRES Company

### Board Members

Michele Cooney, P.G.  
PA DCNR

David Crotsley, P.G.  
HDR

Jason Floyd, P.G.  
Mountain Research, LLC

Emily V. Glick, P.G.  
Tetra Tech, Inc.

Jenny Kachel, P.G.  
Stantec

Chris Kotch, P.G.  
Barry Isett & Associates, Inc.

Vicki Pitman, P.G.  
EA Engineering, Science, and Technology, Inc., PBC

Greg Rosenzweig, P.G.  
Groundwater & Environmental Services, Inc.

Mark Sakino, P.G.

Tom Wagner, P.G., C.P.G.  
Coterra Energy, Inc.

Stephen Zbur, P.G.  
CORE Environmental Services

General Information: [PCPG Office](#)

## INSIDE THIS ISSUE...

President's Message .....	1
Upcoming Events .....	2
Can You Identify This Mineral? .....	2
PCPG Annual Meeting .....	3
Delaware Valley Science Fair .....	4
Annual Photo Contest .....	5
Kids' Geology Education .....	7

## MESSAGE FROM THE PRESIDENT

Happy Spring!

As the warm weather is upon us, we've completed another successful Annual Membership Meeting. I'd like to extend our warmest appreciation to those in attendance as well as to the speakers for sharing their research, work experience, and knowledge of topics of interest to the membership. The event provided a wide range of topics including technical, financial, and ethical. Thank you, Russ Losco, P.G., for presenting ethics with humor!



The board struggled with whether to hold the meeting virtually, as done in 2021, or in person which provides a better opportunity for networking and fellowship. As we all know, COVID-19 has been very unpredictable, but ultimately the desire to see our membership face to face won. We're so happy for those who were able to make it out to the event. As mentioned in the "PCPG Year in Review" afternoon talk, we'd initiated virtual webinar offerings prior to the pandemic and will continue to develop virtual opportunities for continuing education into the future. We recognize that virtual events have the added benefit of time and cost savings and provide more flexibility. That said, in addition to the Annual Meeting, we have recently started offering in-person seminars as there are certain topics that benefit from being taught in person and provide hands-on learning. Check PCPG's [courses and events](#) web page for additional in-person and virtual offerings already on the books.

Another exciting part of the annual meeting is the student poster competition. We were fortunate to have a group of amazing undergraduate students from Kutztown, Shippensburg, Bryn Mawr, Indiana University of Pennsylvania, and Bucknell. Congratulations to Molly O'Halloran from Bucknell for winning best poster and presentation of the day, and Noah Workman of Kutztown for runner-up. In addition to the student posters, PCPG hosted a student discussion panel where soft skill topics were discussed: such as the importance of good communication and writing skills as well as tips on interviewing and resume building.

Continued on Page 2



# UPCOMING PCPG EVENTS

**May 23, 2022**

Measurement and Modeling of  
Injection and Flowback for Subsurface  
Pumped Energy Storage in Horizontal,  
Fluid-Filled Lenses

Webinar: 1:00 - 2:00 PM

**June 22, 2022**

In-Situ Remediation of Sulfate  
Contamination

Webinar: 1:00 - 2:00 PM

**Summer 2022  
Virtual PG Review  
Course Webinars:**

**Dates/Times to be announced**

**September 15, 2022**

Predictability and Practicability of  
Attaining Pennsylvania's Proposed  
MCLs for PFOS and PFOA in  
Groundwater

Webinar: 2:00 - 3:00 PM

FOR A COMPLETE LIST OF UPCOMING  
EVENTS OR TO REGISTER ONLINE,  
CHECK OUR [HOME PAGE](#) EVENT  
CALENDAR, OR VISIT [PCPG'S  
COURSES AND EVENTS](#) WEB PAGE.

## CAN YOU IDENTIFY THIS MINERAL?



What looks like gold, often has a cubic habit, and is made of iron and sulfur?

Answer on page 8.

Source: [mindat.org](http://mindat.org)

## PRESIDENT'S MESSAGE *Continued from Page 1*

As always, PCPG looks to membership to provide feedback on individual presentations and the meeting so that we can better tailor future events to the needs of the "PCPG Community". Thank you to those that provided feedback – there are some great suggestions! I love the idea of a "Day in the Life..." podcast series. That's a great suggestion to further explore and share the daily tasks of geologists.

A short summary of the Annual Meeting and a recording of my President's Presentation are available on our [homepage](#). For a more detailed summary of the day, see the newsletter article on page 3.

Thank you again to attendees, speakers, and the Associate Members who all helped make the day a success. We hope to see you all again soon and I wish everyone happy spring days.

Very truly yours,



Tiffani Doerr, P.G.  
PCPG President

## PCPG ANNUAL MEETING 2022

*Leslie Tintle (Sanborn, Head, and Associates, Inc.) and Michele Cooney, P.G. (PA DCNR), PCPG Board Member*

The annual meeting was held in-person in Harrisburg, PA with about 100 registered attendees. Following last year's virtual annual meeting, it was so nice to finally be in a room filled with geologists enjoying a day jam-packed with science.

The morning began with an hour of networking and refreshments where everyone had the opportunity to catch up with old colleagues and meet new ones. The day followed with talks ranging from technical advances in our field to regulatory and policy changes impacting our industry.

### Welcome/Opening Remarks

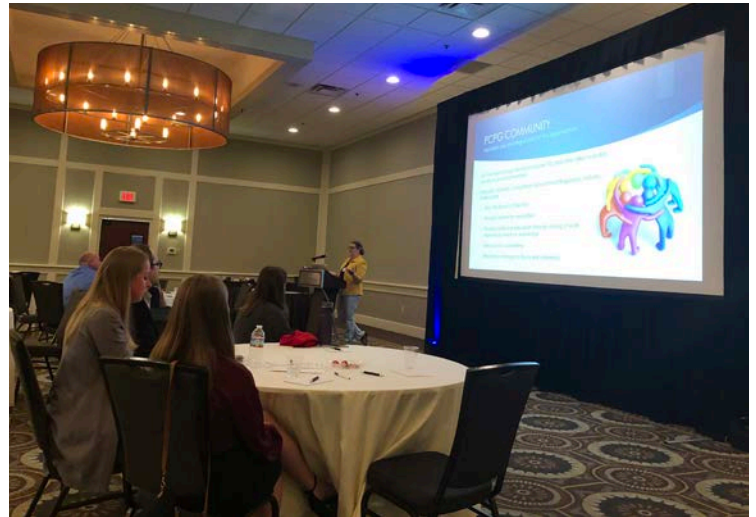
**Tiffani Doerr**, P.G., Evergreen Resources Management Operations and PCPG President, kicked off the meeting with a warm welcome to the attendees and a special appreciation for attending the event in-person this year. Ms. Doerr welcomed and introduced the newest, elected members of the board as well as other past and present board members. She gave many thanks to all past and current presenters who have taken part in sharing their scientific work with the PCPG community.

### Technical Program

**Jamie Suski**, PhD, and Senior Scientist at EA Engineering, Science and Technology, Inc. PBC, began the technical program, as she said, "from the perspective of a life scientist to a room full of physical scientists." Dr. Suski presented very important research on PFAS toxicity to aquatic animals. PFAS is used in many applications such as grease and water stain repellents, fire extinguishing, foams and non-stick cookware. Through her research on fathead minnows, different types of PFAS and its impact on these aquatic species was studied focusing on PFOS and PFHxS specifically. She concluded that PFOS is more toxic due to the ability to accumulate to greater concentrations in comparison to the other PFAS's. This research resulted in a list of overall thresholds that can be used in Ecological Risk Assessments. Dr. Suski finished her talk by explaining that firefighting foam is a large source of PFAS and research is being done using a multi-taxa investigation on alternative foams.

**Joseph Krupansky**, P.G., with Gannett Fleming, Inc., spoke about a rock slope mitigation project along SR-209 in Jim Thorpe, PA. This study utilized photogrammetry techniques to create a digital terrain model of the area for contour pole plots and kinematic analysis. The highlight of his presentation was dramatic videos of the rock failure along the road. The project focused on two AOCs and a number of constraints to make sure the work was done safely and correctly which was no easy feat. Mr. Krupansky stressed that communication on the project was the key with so many subcontractors, moving parts and the inevitable changes that needed to be made in the field. We all need to work together as a team for projects to come to a resolve - combined we have more experience, and hopefully more success, together.

**Brett Gilmartin**, Project Officer for US EPA Brownfields and Land Revitalization Branch, presented on Brownfields Grants and the Bipartisan Infrastructure Bill and began his talk by saying "I have never presented to Geologists before, I heard you guys rock!" which inevitably brought a smile to everyone in the room. The five different types of grants are: assessment, cleanup, multi-purpose, revolving loan funds, and job training. Eighty percent (80%) of the awards are site assessment grants with an emphasis on underserved and new communities. Mr. Gilmartin walked the group through a case study highlighting the steps taken to redevelop a brownfields site: creating a vision, securing funding resources, due diligence, cleanup of the site, and construction/revitalization.



2022 Annual Meeting - President's address

*Continued on Page 6*



### INCREASE IN QUALITY EARTH SCIENCE PROJECTS AT 2022 DELAWARE VALLEY SCIENCE FAIR

Jenny Kachel, P.G. (Stantec), PCPG Board Member

On April 6, 2022, nearly 1,000 6th through 12th grade students gathered at the Greater Philadelphia Expo Center in Oaks, Pennsylvania to present their STEM (Science, Technology, Engineering, and Mathematics) research projects at the annual [Delaware Valley Science Fair](#) (DVSF). These students had already received awards at one of fifteen regional science fairs conducted throughout southern New Jersey, southeastern Pennsylvania, and Delaware, earning themselves a slot in the next level of competition at the DVSF. After two years of virtual science fairs, students were once again sharing their research in-person and vying for a spot to attend national and international science fairs as well as competing for numerous [special awards](#) including one sponsored by PCPG.

... the students' well-expressed expertise and obvious passion for their subjects made narrowing down the field even more challenging.

For over 30 years, representatives from PCPG have been attending the DVSF as special awards judges and issuing an award to an exemplary earth science project on behalf of the organization. Former PCPG president, Gary Kribbs, P.G., of Aeon Geoscience, Inc., has been participating as a judge for many years and was impressed with the number of outstanding quality earth science projects in this year's competition, particularly at the high school level. In recent years, students' projects featured fewer geoscience topics than in the past. Mr. Kribbs remarked, "This year, the number of quality earth science projects improved. For a while, we were getting nervous." There were several noteworthy projects in the environmental sphere in particular, including projects on emerging contaminants per- and polyfluoroalkyl substances (PFAS) and microplastics. Not only did the caliber of the research make for a difficult choice in selecting a winner, but the students' well-expressed expertise and obvious passion for their subjects made narrowing down the field

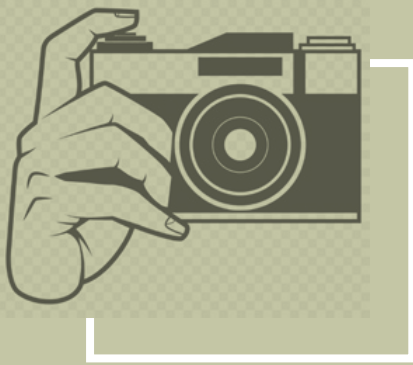
*Continued on Page 8*

 **parratt  
wolff inc**  
1969 - 2019  
[www.pwinc.com](http://www.pwinc.com)  
[info@pwinc.com](mailto:info@pwinc.com)  
1-800-782-7260



sonic drilling – rotary  
drilling methods –  
ASTM Standards for  
geotechnical sampling  
- NQ, HQ, and PQ rock  
coring - casing  
advancement - packer  
testing – well  
installation – well  
abandonments – well  
rehabilitation – air  
excavation – direct  
imaging - Geoprobe  
sampling – injection  
services – Difficult  
Access Equipment





## PCPG ANNUAL PHOTO CONTEST

The 2022 Annual Photo Contest is open and will remain open until Saturday, October 1, 2022. There is no specific theme for this year's contest. Photos showing interesting geology from the field, laboratory, your office, personal collection or even a photo from the past may be submitted.

PCPG members may submit their photos by downloading and completing the Photo Contest Entry Form, located on our [Photo Contest](#) webpage, under Resources. Note that we ask for a description of the image on the Entry Form; please provide context but limit the explanation to under 100 words. Email your photo and Entry Form to [photocontest@pcpg.org](mailto:photocontest@pcpg.org).

A member of the PCPG Photo Committee will contact the winner(s) at the conclusion of the contest. The winning photo(s) will be shared on the PCPG website and announced in the next newsletter.

Stay Curious Geos!  
PCPG Photo Committee

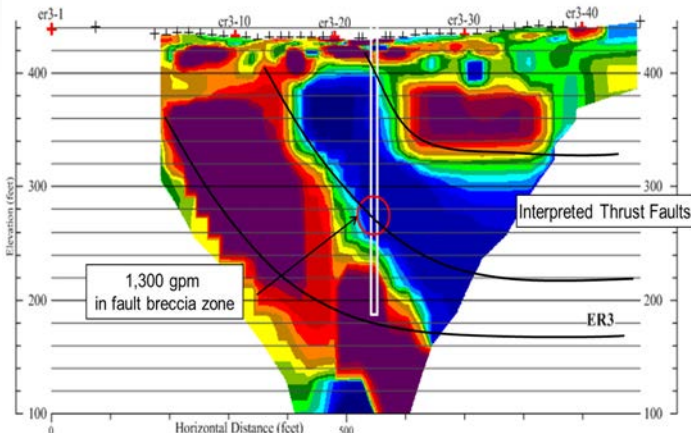


**We Solve Complex Problems by Seamlessly Integrating:**  
**Geophysics • Geology • Hydrogeology • Soil Science • Geotechnical & Civil Engineering**

### Surface Geophysics

- Environmental/Waste Delineation
- Sinkhole/Karst Investigation
- Fracture Mapping & Top of Rock
- Groundwater Supply Support
- Seismic Surveys
- Earth Resistivity
- Electromagnetics
- Gravity
- Ground-Penetrating Radar

Surface Geophysics used in Water Supply Development



### Borehole Geophysics

- Truck-mounted Logging Systems (each w/ 5,000 feet of wireline)
- Portable Logging Systems
- Optical & Acoustic Televiwers
- Fluid Temperature, Conductivity, pH, Pressure, O2, & Redox
- Formation Resistivity
- 3-Arm Caliper
- Heat Pulse Flow Meter
- Density & Neutron
- Full Waveform Sonic
- Borehole Deviation

ARM Geophysics Borehole System



[www.armgeophysics.net](http://www.armgeophysics.net)  
PRECISE. RESPONSIVE. SOLUTIONS.

## ANNUAL MEETING *Continued from Page 3*



2022 Annual Meeting - Russell Losco's presentation on Ethics in the Geosciences.

**Russell Losco**, M.A., P.G., C.P.S.S. of Lanchester Soil Consultants, Inc., gave a thoughtful, and entertaining, presentation on the ethical challenges professional geologists may face during their careers. Mr. Losco highlighted the “gray areas” of ethical situations that a geologist may encounter in the consulting world, comparing his insights to the Munsell Soil Color Chart. He is, after all, a soil scientist! Mr. Losco's presentation reminded all attendees that the foremost responsibility of a professional geologist is to safeguard life, health or property and to promote general welfare. Mr. Losco also recently published *The Traveler's Guide to the Geology of Costa Rica* which was available for purchase by meeting attendees.

**Ginny King**, Natural Capital Program Director and **Josh Running**, National Technical Lead for Ecosystem Restoration, both with Stantec, gave a fascinating presentation on finding nature-based solutions for companies interested in improving upon their Environmental, Social and Governance initiatives. They

presented case studies highlighting how natural capital (the world's renewable and non-renewable resources) can be quantified on properties that are being sold, transitioned, or remediated. This natural capital not only adds value to those properties, but also meets many of the United Nations' sustainability goals to benefit both nature and humankind. Ms. King and Mr. Running highlighted that these properties can quickly become valuable natural habitat and also terrestrial carbon sinks.

**John Gross**, Environmental Group Manager for the PADEP Land Recycling Program brought an overview of Acts 3 and 4 to the general assembly. Mr. Gross listed state and federal funding streams available to municipalities and companies, including Industrial Site Reuse Program (ISRP) and Business in Our Sites (BOS) through the PA Department of Community and Economic Development as well as the Local Share Account. Mr. Gross also noted that the Local Share Account, which distributes gaming revenues through the Commonwealth Financing Authority, needs only to prove “public interest” to apply for funding.

**Sam Warner**, Senior Project Manager ICSA and **Jessica Bulova**, Project Manager Professional, with Sanborn, Head, and Associates, Inc. completed the technical talks with an overview of second and third generation site characterization technologies for identifying and remediating subsurface contaminant plumes. The core Discrete Fracture Network™ characterization and analysis, which was developed at the University of Guelph, Ontario, Canada, can account for lingering contamination in fractured bedrock. This approach allows for a more directed remediation approach which they illustrated using a case study from an ongoing remediation project in France.

The meeting wrapped with a door prize raffle followed by merriment and networking at the Continental Drifters reception. Be sure to visit PCPG's website to see the [upcoming events](#) for the rest of 2022.



## **NEW PCPG CORPORATE MEMBER**

Please join us in welcoming our newest  
PCPG Corporate Member:



Interested in becoming a PCPG Corporate Member? Visit our [Join PCPG](#) page, then [download](#) the Corporate Membership application. Bundling multiple Individual Memberships into a single Corporate Membership provides up to 25% discount for each professional enrolled. Telephone PCPG by dialing (717) 730-9745 for more information.



## KIDS' GEOLOGY EDUCATION: MULTI-MEDIA ARBOR DAY CRAFT

*Leslie Tintle (Sanborn, Head, and Associates, Inc.), contributing writer*

April 29, 2022 marked the 150th anniversary of Arbor Day. This holiday began on April 10, 1872 in Nebraska by Julius Sterling Morton. It is estimated that nearly one million trees were planted on the very first Arbor Day. While this activity is not focused on geology, it does encourage children (and the young-at-heart) to observe and discuss the natural world. More educational materials are available on the [Arbor Day Foundation Website](#).

**"Other holidays repose upon the past, Arbor Day proposes for the future."**

– J. Sterling Morton

### Things you will need:

Colored paper • Vibrant paint colors or colored pencils and markers • Paint brushes  
Recycled cardboard • Craft scissors • Natural items (small tree branches, acorns, pinecones, walnuts, flowers, etc.)  
Recycled bottle tops • Craft glue • Tissue paper

### Steps to creating your masterpiece:

1. Select a sturdy piece of paper to use as the foundation for your Arbor Day inspired project. Decide what type of forest to create by thinking about your favorite type of tree(s): birch, willow, cedar, pine, oak, maple, fruit, etc. Review this [leaf ID activity](#) for ideas!
2. Use colored pencils, markers, or paint to decorate and add color and landscape elements to the background.
  - a. Choose a place or environment where your forest is rooted: tropical, swamp, temperate, subarctic (boreal/taiga) forests, or in a suburban or urban setting.
  - b. Choose a season of the year: winter, spring, summer, or fall.
3. Construct the trees by using different multi-media recycled materials (cardboard, bottle caps etc.) and natural items to create the tree trunks, branches, leaves, flower blossoms, fruits, etc. The trees can be of varying size, shape, and color.
4. While creating the scene, explain to your family or friends why you chose the trees and environment.
5. Topics to discuss are: if a type of tree reminds you of a place or person that you know, what you like about your favorite types of trees, which of your favorite fruits grow on trees, or what types of animals might live in your forest.
6. After creating the scene, choose a name for your forest.
7. Discuss the benefits of trees: provide shade, provide food and a home for birds and insects, hold up your tire swing, provide support for your hammock or treehouse, provide visual beauty with flower blossoms in the spring and multi-colored foliage in the fall, offer a strong natural structure to climb, absorb excess water, etc.



## CAN YOU IDENTIFY THIS MINERAL?

Emily Glick, P.G. (Tetra Tech), PCPG Communications Committee Co-Chair

**Answer:**

### **Pyrite – Iron Sulfide:**

*The most abundant sulfide mineral with a metallic luster and pale brass-yellow hue.*



*Sulfuric acid leaching from pyrite exposed along Interstate 99 in 2003.*

Pyrite, also known as iron pyrite or fool's gold, is a mineral found throughout Pennsylvania. Scientists say that its prevalence here might be tied to an [Eocene meteor that hit Earth around 35 million years ago](#). The meteor left a dent known as the Chesapeake Bay impact crater and pushed the pyrite from the mantle to Earth's surface, based on isotopic analysis by Ryan Mathur (a geochemist at Juniata College). That makes Pennsylvania pyrite a special breed.

During construction of Interstate 99 in Centre County in 2003, state road builders encountered a "mother lode" of pyrite. Ten miles west of State College at Skytop Mountain, PennDOT uncovered a huge deposit of pyrite in the sandstone ridge. When exposed to air and water, pyrite leaches sulfuric acid. Acid mine drainage is a common problem at coal mines throughout the state, but exposing pyrite during road building is less common. The sulfuric acid leached from the exposed pyrite at Skytop Mountain quickly became an environmental nightmare, costing \$79 million dollars in just five years. Archie Filshill with CETCO Contracting Services [presented on this project](#) in the University of Kentucky's 2009 Technical Forum on Geohazards in Transportation in the Appalachian

Region. [Barry Sheetz](#), Professor Emeritus of Materials, Civil and Nuclear Engineering at Penn State and expert on acid mine drainage, was contracted by PennDOT to help predict other locations where such pyrite deposits might exist in PA.

The best place to hunt for a pyrite sample may be in and around the French Creek Mines in Chester County. However, pyrite may be found almost anywhere in PA. As of 2008, Sheetz and his colleagues had mapped 150 isolated pyrite deposits throughout central PA counties like Blair and Huntington as well as eastern PA counties of York and Montgomery.

## LOOK WHO KNEW

PCPG sends recognition and a PCPG sticker to Mr. Brian Greene, Ph.D, P.G., Senior Engineering Geologist with Gannett Fleming, Inc.

Mr. Greene replied that he knows Celestine, the light blue strontium sulfate mineral listed on pages 2 and 8 of the Winter 2022 PCPG Newsletter, as Celestite. He encountered this mineral in the Silurian age dolomitic quarries in western Ohio near Sandusky and Toledo early in his career as a geologist.

Thanks for sharing!

## DELAWARE VALLEY SCIENCE FAIR *Continued from Page 4*

even more challenging. However, a project on the use of remote sensing techniques created by a 10th grade student from High Technology High School in Lincroft, New Jersey stood out among the competitors. Katharine Fang's project, entitled "Surveying Water Surface and Wetlands in the Delaware Bay Using Cloud-Removed Point Data," looked at a variety of ways these types of data could be used to perform surveys with higher frequency and more cost effectively than traditional field-based techniques. Miss Fang's hard work and excellent interview earned her a \$500 prize and certificate from PCPG (along with four other awards, including a full scholarship to the Drexel Environmental Science Leadership Academy this summer). If this year is any indication, there is much to look forward to in the coming years from the talented students of the Delaware Valley!

*About the author: Jenny Kachel, P.G. is a Geologist with Stantec in West Chester, PA. Along with Gary Kribbs, P.G., she represented PCPG at the DVSF as a special awards judge. This is Ms. Kachel's first year serving on the PCPG Board of Directors.*



## DEADLINE FOR OUR NEXT NEWSLETTER IS JULY 10, 2022

Articles are suggested to be about 700 words maximum. For more information, contact our PCPG Newsletter Editor and Communications Committee Co-Chair - Emily Glick, P.G., by [eMail](#).

### PCPG ASSOCIATE AND CORPORATE MEMBER SPONSORSHIP RATE

(Rates are listed as amount per issue)

Size	Commitment:	1x	4x
1/2 Page Horizontal (8" x 4.7")		\$225	\$150
1/2 Page Vertical (3.875" x 9.375")		\$225	\$150
1/4 Page Horizontal (4.7" x 3.875")		\$140	\$95
1/4 Page Vertical (3.875" x 4.7")		\$140	\$95
Business Card (H or V)		\$75	\$50

### OTHER SPONSORSHIP RATES

(Rates are listed as amount per issue)

Size	Commitment:	1x	4x
1/2 Page Horizontal (8" x 4.7")		\$300	\$240
1/2 Page Vertical (3.875" x 9.375")		\$300	\$240
1/4 Page Horizontal (4.7" x 3.875")		\$185	\$150
1/4 Page Vertical (3.875" x 4.7")		\$185	\$150
Business Card (H or V)		\$100	\$80

**ADS MUST BE SUBMITTED AT CORRECT SIZE AS STATED ABOVE AND MUST BE PRINT-READY, 300 DPI**

**FILE FORMATS ACCEPTED: .PDF, .TIF, .JPG, OR .PNG**

**SPONSORS: Please remit payment to PCPG, 116 Forest Drive, Camp Hill, PA 17011**



Please consider the environment before printing this newsletter.

## PCPG ASSOCIATE MEMBERS



**AWT ENVIRONMENTAL SERVICES, INC.**

AWT Environmental Services, Inc.

Contact: Kristen Wolansky

Phone: (732) 613-1660



Elk Environmental

Contact: Jestyn Newswanger

Phone: (610) 372-4760



Eurofins Lancaster Labs Environmental

Contact: Andrea DeCola

Phone: (908) 809-9243



Parratt Wolff, Inc.

Contact: Josh Ellingworth

Phone: (570) 523-8913



Suburban Testing Labs

Contact: John Weisman

Phone: (610) 207-8154