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General Information: PCPG Office

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MESSAGE FROM THE PRESIDENT

*"There are far better things ahead than any
we leave behind." - C.S. Lewis*



Fellow geoscientists, Corporate and Associate Members, as we enter another chapter and move forward into 2024, I wish all of you a very safe, prosperous, and fulfilling new year. It has been an honor and privilege to serve PCPG as President and in my many years on the Board of Directors. The PCPG President for the 2024 calendar year will be Jason Floyd, P.G.. Please provide him, as I will, with all the support and assistance to continue moving forward – PCPG will be in excellent hands.

Also, sincere thanks and appreciation to the Board of Directors. Please remember that these incredible people volunteer their time and effort to promote the geoscience community through PCPG and their contributions are very much appreciated by our geology community.

To reflect on my tenure as President, the theme I focused on, and will continue to promote for the organization, is "Community." In 2023, great progress was made on several fronts. In keeping with PCPG's strategic goals, the focus was to expand PCPG's outreach footprint and provide services for students, membership, and academia. PCPG will continue to work with each of these groups to provide well rounded, educated, and professional geoscientists to support Pennsylvania and our communities.

In 2023, PCPG set the stage to nurture that integration by developing relationships with the Pennsylvania State System of Higher Education (PASSHE), the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR), and regulatory agencies tangential to our larger industry. PCPG is also undertaking the process to obtain accreditation in NY for PCPG's continuing education programs.

In 2023, PCPG provided PASSHE with opportunities to support their geoscience programs, including providing speakers and hands-on drilling demonstrations, providing young professionals with experience in drilling methods and documenting soil and groundwater conditions.



UPCOMING PCPG EVENTS

January 23, 2024

Geophysical Investigations of Reclaimed
Minelands in Nanticoke, PA to Inform Further
Restoration and Redevelopment

Webinar: 1:00-2:00 PM ET

February 20, 2024

Special Core Analysis for Energy Applications

Webinar: 1:00-2:00 PM ET

February 29, 2024

2024 PCPG Annual Meeting, Education Program,
Networking and Barb Dunst Memorial Fund
Bottle Auction

Harrisburg, PA

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.

NAVIGATING A LARGE SCALE PFAS INVESTIGATION

By Chelsea Tarbell, P.G., HDR, Inc.

Commonly referred to as the “forever chemical,” PFAS is becoming a topic of interest to many. PFAS or per- and polyfluoroalkyl substances are highly persistent compounds used in anything from fast food packaging to firefighting foam, to printing inks. PFAS are divided into long and short chain compounds. Long chain compounds (consisting of >6 or 7 carbons) are hydrophobic and typically more likely to bioaccumulate in the environment. While the shorter chain hydrophilic PFAS compounds (<6 or 7 carbons) are more soluble and more mobile in liquids. Though our knowledge of PFAS is growing every day, the full extent of PFAS presence and migration through the environment is not fully understood.

In a case study currently underway, PFAS's migration and subsequently their extent within the environment, is being investigated. The case study Project Area is unique in that it consists of multiple neighboring towns, water suppliers, well uses, wastewater treatments plants, and property/land uses. The underlying geology of the Project Area is the Gettysburg Shale Formation consisting of northeast moderately dipping beds of red shale, mudstone, sandstone, and quartz conglomerate with thin beds of impure limestone. A pegmatitic diabase acts as the Project Area boundary with several diabase limbs extending into the Project Area. Thin beds of dark purple metamorphosed argillite outline the diabase. The Project Area encompasses one watershed with multiple sub-watersheds, and a complex network of springs and losing and gaining streams.

What started out with PFAS being identified in two supply wells developed into a multi-year investigation including:

- Due diligence database analyses
- Facility Investigations
- Development of a Site Conceptual Model that continues to expand
- Sampling of surface and overburden soils, wastewater treatment plants and pumping stations, residential and supply wells, surface water features, and springs
- Stormwater sampling events
- Dye tests
- Installation of shallow (30-75' below ground surface (bgs)) and deep wells (130-200' bgs)
- Statistical analysis.

Continued on Page 6

PCPG ANNUAL MEETING OVERVIEW

Enjoy top-notch educational sessions, great food, networking, and camaraderie

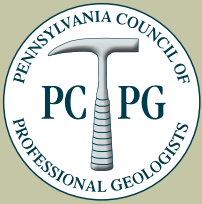
Join us Thursday, February 29 for
PCPG's 2024 Annual Meeting, Education Program,
Networking and Barb Dunst Memorial Fund Bottle Auction
at the
Best Western Central Hotel & Conference Center - Harrisburg, PA
Registration and morning refreshments begin at 8:30
Program gets underway at 9:30 AM
[Please Join us!](#)

[DOWNLOAD AGENDA](#)

(with session descriptions and speaker biographies)

- 9:30 **Welcome/Opening Remarks - (Ballroom A/B/C)**
- State of the Survey 2024**
Gale C. Blackmer, PhD, Pennsylvania State Geologist
- Student and Young Professionals Breakout Session - (Ballroom D/E)**
- Karst hazard remediation for civil land development projects**
Sean Burns, P.G. (Barry Isett & Associates, Inc.)
- 11:45 **Luncheon, Networking**
- PCPG Year in Review, Current and Planned Activities, Recognition of Special Guests - (Ballroom A/B/C)**
Jason Floyd, PG, President / Chief Hydrogeologist (Mountain Research, LLC), PCPG President
- 1:00 **A "Brief" History of Carbon Sequestration in the US: What Does the Future Hold?**
Bryan Guzman, Director Global Business Development & Technology
- The role of the Pennsylvania Geological Survey in the search for rare earth elements, critical minerals, and novel geological resources**
Adam Ianno, Section Head, Mineral Resource Analysis (DCNR PA Geological Survey)
- I-99 Acid Rock Mineral Deposit, A look Back at the Historical Perspective and the Site Conditions 20 Years Later**
Mark Ios, PG, Senior Associate (Skelly & Loy, Inc., A Terracon Company)
- What's Ahead in 2024: A Legal Perspective**
Scott A. Gould, Member, Co-Chair Energy & Environmental Group (McNees Wallace & Nurick LLC)
- 4:30-6:00 **Announcements/Adjournment followed by the 2nd Annual Barb Dunst Memorial Bottle Auction Fundraiser & Continental Drifters Reception**

[REGISTER](#)



2ND ANNUAL *Barb Dunst Memorial Fund Bottle Auction* FEBRUARY 29, 2024

The Best Western Central Hotel | 800 East Park Drive, Harrisburg, PA 17111

Plans are well underway for another outstanding PCPG Annual Meeting on **February 29, 2024**. Each year this meeting adds new educational programs and ample opportunities for personal and professional growth.

This year we are repeating a fun event and we are encouraging attendee participation. We are holding the **2nd Annual Barb Dunst Memorial Fund Bottle Auction!** Proceeds from this activity will benefit the memorial fund and directly impact one or more of Barb's passions: mentoring the next generation of geoscientists.



HERE'S HOW IT WORKS:

1. We are asking every attendee to bring one bottle of alcohol to the conference. (Feel free to bring cases if you like!) **Please have the bottle wrapped nicely so the identity of the bottle is hidden.** The fun part is that some may bring a bottle of Arbor Mist White Zinfandel and others may bring a bottle of Johnny Walker Blue Label Scotch.
2. Donated, dressed bottles will be on display throughout the day and we'll make announcements asking attendees to stop by the registration table to sign-out a numbered paddle.
3. When the annual meeting concludes and as part of our Continental Drifters networking reception, we will introduce our volunteer (non-licensed) auctioneer and the bidding will commence! Bidders will not know what they are bidding on until after the bid is won. The more bottles donated, the more fun the event! **Form teams to pool resources and stimulate some friendly competition against other teams, or bid as a single participant.** No rules except everyone enjoys the event and we raise revenue for Barb's memorial fund.



Help support this important fundraiser by donating a bottle or more and also by bringing your checkbook to participate as a bidder! At the end of the event - after all bottles are won and before you depart the Continental Drifters Networking reception - stop by to settle your bidding account. **We can only accept personal and corporate checks, and cash. We will not be accepting credit cards.**

Come and help bid the Barb Dunst Memorial Fund to success!

Phone (717) 730-9745 for more information.

DESIGN YOUR OWN FAMILY TREE

By Leslie Tintle, Project Manager
Remington & Vernick Engineers

November marks the month of gratitude, this craft focuses on being thankful for our families and celebrating all of the wonderfully unique people in our lives.

Supplies

1. Assortment of different colored paper
2. Notebook paper and pencil
3. Colored pencils, markers, crayons
4. Glue stick and/or scotch tape
5. Miscellaneous crafting supplies (glitter, sequins, pipe cleaners, cotton balls, buttons, etc.)

Step 1: Prepare a list of family members

1. Ask your parents, grandparents, even older siblings for help with this part – it's more fun to do this craft with people!
2. Grab a piece of notebook paper and a pencil, start making a list of all of your relatives
3. Do not limit yourself to only the names and dates of your relatives - have fun with this!
4. Add information about your relatives' occupations or notable achievements or even a fun fact.
5. You'll be surprised at all of the unique things you can find out about your family by asking!

Step 2: Sketch your family tree

6. It's time to transform your list of relatives into a tree, grab another piece of paper and art supplies
7. Sketch the outline of a tree with multiple branches
8. With the help of your family start placing your relatives on the different tree branches – this doesn't have to be perfect; this will be a template to help you make your finalized family tree.

Step 3: Create your family tree

9. First create the background for your tree, you can print a picture out or draw a scene. Choose something that is important to you and your family.
10. Next, draw or print out your tree on top of your background. The tree is a symbol of family, all branches are connected and each of us is a crucial part of this tree.
11. You can draw the tree and family members with pen/pencils/markers or you can cut pictures out and shapes from different pieces of construction paper to create your tree. Glue/tape the different things onto your background and watch your tree come to life!
12. Now is the fun part, get creative and make interesting frames out of paper and glue them around your photos or sketch of family members.
13. Add some animals to your trees.

Step 4: Share your family tree

14. Your family tree is ready to share with members of your family, frame it or hang it up somewhere that you can look at so your family will always be with you!



Figure 1: Image sourced from <https://wemadethislife.com/how-to-make-a-family-tree-with-your-kids/>



Figure 2: Image sourced from <https://supersimple.com/article/the-family-tree-tips-reasons-to-make-your-own/>

“Family, like branches in a tree, we all grow in different directions, yet our roots remain as one.”

PFAS *Continued from Page 2*

What we have learned thus far:

- PFAS was identified throughout the Project Area at various concentrations in residential wells, surface water, springs, soil, and wastewater treatment plant biosolids.
- PFAS was found on both sides of the diabase limbs.
- PFAS at some sites within the Project Areas was observed at higher concentrations in deeper wells (~150' below ground surface (bgs)) than shallow wells (~30-75' bgs)
- PFAS concentrations at shallow wells for some sites correlated with PFAS concentrations at deeper wells at other sites.
- PFAS concentrations in soil are lower than surface or groundwater concentrations.
- Both long chain and short chain PFAS are present throughout the Project Area
- PFOS (perfluorooctane sulfonate) was the highest concentration PFAS throughout the Project Area to date, though approximately 30 other PFAS compounds were also detected.

What is currently understood about the case study is that PFAS contamination is likely occurring from multiple current or legacy sources and is being discharged to the ground or is already in the ground, infiltrating into the groundwater leaving behind some PFAS compounds in the soil. Groundwater flowing primarily through fractures is then being discharged to the surface water systems via springs. The PFAS compounds then appear to continue to flow downgradient via surface water with some infiltration back to groundwater via losing streams and wetlands.

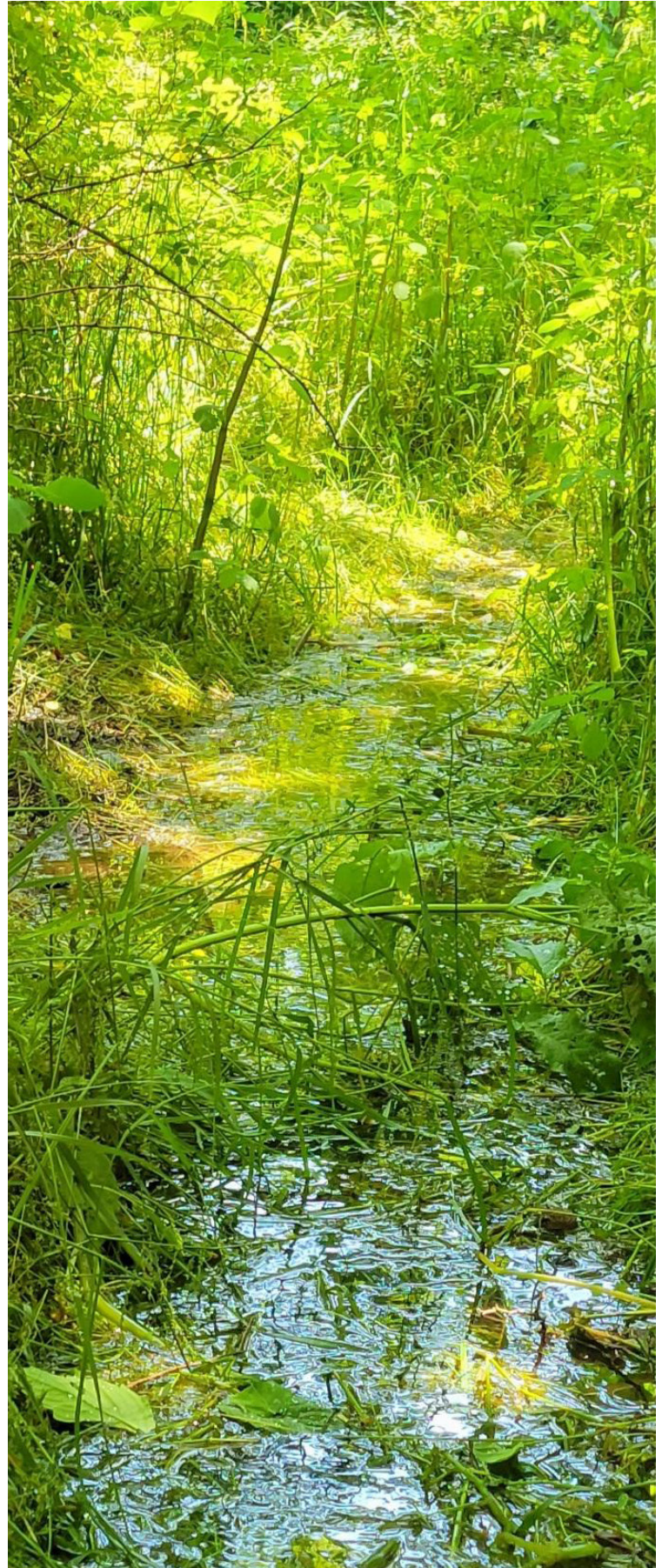
There is still more work to be completed for this investigation to fully understand the migration and extent of PFAS contamination including; additional well installations, fracture trace analyses, borehole geophysics, etc. It is also being studied as to whether the cone of depression produced by the multiple supply wells within the Project Area has resulted in downward migration of the PFAS lower into the aquifer system.

In general, PFAS investigations can be technically challenging and with new regulations, variability of potential sources, and the unknowns of the complete chemical breakdown of PFAS, work can take turns along the way and investigation approaches routinely get modified.

References:

<https://www.frontiersin.org/articles/10.3389/ftox.2021.732436/full>

<https://www.gis.dcnr.state.pa.us/pageode/>



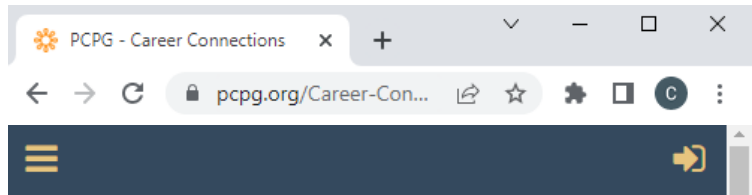
NEW PCPG CORPORATE MEMBERS

*Please join us in welcoming our
newest PCPG Corporate Members:*



SCS ENGINEERS

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.



CAREER CONNECTIONS ►

BE SURE TO VISIT PCPG'S CAREER CONNECTIONS

You asked for it and we created it!

Corporate Members are now able to sponsor open positions in the firm under our Corporate Member Open Positions page.

CORPORATE MEMBER OPEN POSITIONS

The sponsorship fee is \$100 for a two-month listing.
Sponsorships do not auto-renew.

✉ For more details: ☎

Rose Jeffries (717) 730-9745



Looking for a position or an internship?

We now have a Resume Board, too. Submit your resume in PDF format via email to [Rose Jeffries](#) for posting on [this page](#). Be sure you request that the resume be added to the PCPG resume board where your resume will be posted as a PDF download link, at no charge, for 60 days. After 60 days, the posting will be removed but you are invited to resubmit. If looking for an internship, we'll create a special category on the page. Just have the word internship appear in your PDF title along with your name, or mention it in the email.

**Both features are relatively new.
We hope to build-out content in the near future.**

PRESIDENT'S MESSAGE *Continued from Page 1*

Throughout the year students and young professionals were provided with opportunities for in-person and hands-on education, "soft skills" development (communication, management, networking), and an introduction to a support network for future endeavors. We encourage young professionals to be part of the discussion as their input is very valuable to the future of the organization.

PCPG expanded relationships with other geoscience organizations and took the initiative to educate the community on the critical role Geologists and our Corporate Members have to protect the health and safety of people in our state in a variety of ways at the following events:

- American Society of Civil Engineers (ASCE) Central PA Geotechnical Conference, Spring 2023
- Geologic Society of America, GSA Conference Pittsburgh - October 2023
- Look for this event highlighted in an upcoming PCPG's Podcast
- PA Abandoned Mine Reclamation (AMR) Conference, Altoona – October 2023
- PA State Association of Township Supervisors (PSATS) Conference – April 2023

At each we provided Corporate Member contact information that people can reach out to for work- and business-related opportunities.

PCPG's presence at these events will provide a platform to expand the organization footprint and provide greater opportunities for all members. If you would like PCPG to be part of a geoscience related conference or need community education, please reach out. PCPG is open to all its members to help contribute to our outreach.

Members! You have got to be in it to win it. No longer can we isolate ourselves and our geoscience professions. The future requires an integration of our unique specialties to propel the best, the brightest, and most capable geoscientists in their careers to address Pennsylvania's future geoscience needs. Carry on PCPG! Appreciate the opportunity to serve you!

The future depends entirely on what each of us does every day. – Gloria Steinem

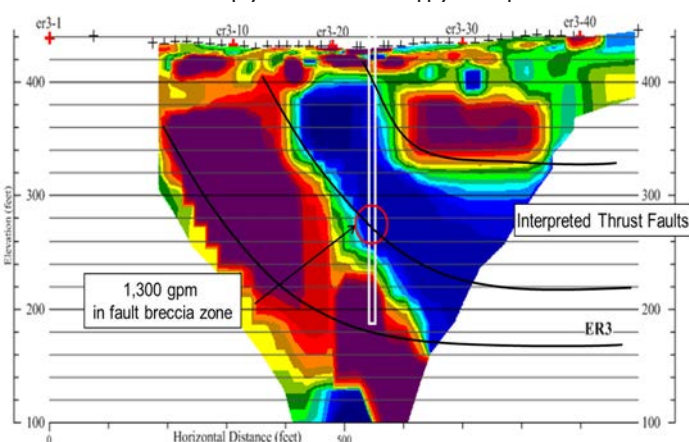


We Solve Complex Problems by Seamlessly Integrating:
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DEADLINE FOR OUR NEXT NEWSLETTER IS FEBRUARY 29, 2024

- o **Are you a geologist/artist?** Send us a geo-cartoon, picture of a rock/mineral painting of yours, other creative elements we can include!
- o **Are you a geologist/photographer?** Send us your cool rock/rocky landscape pics!
- o **Are you a geologist/academic researcher?** Send us a summary of your latest research!
- o **Are you a geologist/project manager?** Send us a summary of your latest really awesome project!
- o **Are you a geology student/recent grad?** Send us a summary of a class project, technical paper, field camp experience, senior thesis, etc.!
- o **Are you a geologist/lawyer?** Send us a summary of the latest geology-related legal news!
- o **Are you a geologist/site safety officer?** Send us reminders of how to stay safe on the job site!

Articles are suggested to be about 700 words maximum. For more information, contact our PCPG Newsletter Editor and Communications Committee Co-Chair - Leslie Hartzell, by [email](#).

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(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

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(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

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PCPG ASSOCIATE MEMBERS



Elk Environmental
 Contact: Jestyn Newswanger (610) 372-4760



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While signed into your Instagram account, check out [pcpg_rocks](#) or search for [@pcpg_rocks](#).



Please consider the environment before printing this newsletter.