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PCPG Newsletter
Communicating Key Information & Concerns to Geologists and Environmental Professionals

InsIdE thISt Issue...
President’s Message ................................................................. 1
Member Spotlight – Penn E&R ........................................... 2
History of Well Plugging in PA ............................................. 3
Government Affairs Committee Update ................................. 4
Ricketts Glen Day Trip ................................................................ 5
Student Corner ........................................................................ 8

MESSAGE FROM THE PRESIDENT

Greetings!

I hope you all have had a productive summer, yet took some time off from work to enjoy friends, family and the outdoor environment. As I travelled to Vermont recently to help move some furniture into my youngest son’s college apartment, it reminded me of my college years and how, when I graduated, I knew I had a good beginner’s set of tools in my belt (Brunton compass, rock hammer, Munsell soil chart, acid bottle and a hardness pick set), but no real idea what career opportunities were available to me and virtually no contacts in the industry. For our student members, PCPG can be a great resource for you to learn about career opportunities, build your network of professional contacts and often, find a willing and helpful geology mentor. And for those of you who’d like to give back to the profession in a meaningful way and help with our college outreach program, contact any PCPG Board Member and express your interest. PCPG’s outreach program schedules visits with interested geology departments at various colleges and universities in and near Pennsylvania and we’d be happy to work with you to visit your alma mater. Speaking for a young college kid who called every environmental consulting and geology firm in the phone book (remember those?) over a period of a few months to find out more about geology career paths – there are easier ways to do it. Also – a big thank you to Konrad Crist (then of Dunn Geosciences) for taking time out of your day to speak with that young kid nearly 30 years ago and for pointing me to R.E. Wright Associates, Inc. An even bigger thank you goes to Dick Wright for giving that young kid a chance (albeit after nearly six months of persistent, yet respectful, pestering and badgering).

As always, I welcome your thoughts, feedback and comments on PCPG’s vision and mission. Feel free to send me an email (drw@stevenslee.com) and don’t forget to visit our website at www.pcpg.org for more information on our events and programs.

Very truly yours,

Donald R. Wagner, P.G.
PCPG President
MEMBER SPOTLIGHT:
PENN ENVIRONMENTAL & REMEDIATION, INC.

Penn Environmental & Remediation, Inc. (Penn E&R) is a diverse environmental, engineering and energy consulting company with offices in Eastern (Hatfield), Central (Wellsboro/ Mansfield), Northeastern (Springville) and Western (Pittsburgh) Pennsylvania, and New Martinsville, West Virginia. Founded in 1996 on the principle of offering “Cost Effective Solutions to our Clients’ Needs”, Penn E&R has served industry and government for nearly 20 years.

Penn E&R is unique in having the benefit of being supported by a major industrial manufacturer - Penn Color, Inc. Headquartered at an 86-acre Hatfield, PA campus, Penn E&R has the resources of world-class research facilities, including laboratory support, IS/IT support second to none, and exceptional mechanical and electrical engineering/testing facilities. Their executive management has more than one hundred years of combined experience in environmental, engineering and energy consulting.

Some of Penn E&R’s representative projects include:

- **In Situ Bioremediation, ISCO, Two-Phase Vacuum Extraction and Air Stripping** - Hillsborough, New Jersey: These technology advances can complement or replace the “pump & treat” technology in place at many ground water remediation sites. To accelerate the removal of VOCs from this site, a Two-Phase Vacuum Extraction (TPVE) system was designed, installed and operated by Penn E&R.

- **Land Development** - Feasterville, Pennsylvania: Scope of work included site design and entitlement services, which included multiple stormwater management components, E&S controls, utility connections, landscaping and construction details.

- **Engineering Services for Water Sourcing Facility Sayre, Pennsylvania**: Penn E&R engineered, permitted, and constructed a 900,000 gpd surface water withdrawal system from the Northern PA reaches of the Susquehanna River to support operations in the Marcellus Shale region. The photo below shows cofferdam and wet well installation.

- **Site Remediation** - Columbia, Pennsylvania: Penn E&R was contracted to remediate a former manufactured gas plant (MGP). Work included E&S controls, coordination with utility companies to relocate live utilities, asbestos abatement, clearing, grubbing & excavation of contaminated soils, installation of pipe and stormwater inlet structures, and disposal of contaminated debris.

For more information, please contact Penn E&R at (215) 997-9000 or via e-mail: mail@penn-er.com. Check out their website at www.penn-er.com.

A coffer dam and wet well installation by Penn E&R, at a water withdrawal point on the northern PA reach of the Susquehanna River.
A BRIEF SUMMARY OF HISTORIC OIL AND GAS WELL PLUGGING REQUIREMENTS IN PA

Information compiled by Amy Randolph, P.G. – Senior Geologic Scientist
PA Department of Conservation and Natural Resources
Bureau of Forestry – Minerals Division

In PCPG’s summer 2014 newsletter, we read that contrary to the media’s suggestion that lateral drilling is something new, this technique had its beginnings circa 1873, only 14 years after the Drake oil well was drilled in northwest Pennsylvania.

Similarly, it might be presumed that oil and gas well plugging technologies and requirements are also more recent, developed as a result of the modern environmental regulation era over the last few decades. But these too can trace their roots back to within a few short years of the Drake well discovery.

Even prior to official legislation, some landowners were requiring plugging in their lease contracts. The Derrick’s Hand-Book of Petroleum, Volume II (Derrick Publishing Company, Oil City, PA, 1900, pp.199-202) cites an August 1, 1865 lease in Warren County as the first to reference plugging, stating that the well “shall be filled with earth before another shall be put down”. A June 1866 lease required “all wells abandoned by lessee shall be properly plugged to exclude the surface or fresh water from the oil-bearing rock”.

And a September 1865 lease is reported to be the first to require the tube and “seedbag” method for plugging. This involved attaching a sheath of leather over a length of casing (i.e., tubing), affixing it to both ends of casing and filling it with flax seed which would then expand with exposure to moisture in the well bore such that it filled the annular space around the casing after it was lowered into the well. Seed bag technology patents were granted in October and November 1865.

Legislation: The following is a brief summary of early attempts at plugging legislation in Pennsylvania known to this author (there may be others).

Act 80 of 1878, approved on May 16, 1878 – Legislation was passed which stated, “That all owners of and operators of oil lands within this commonwealth, shall in a practical manner plug their wells, at proper depth, with wood and sediment, in a manner sufficient to exclude all fresh water from the oil bearing rock, and to prevent the flow of oil or gas into the fresh water.”

This legislation carried a fine of between twenty and one-hundred dollars for violations, to be divided equally between the informer of such a well, and the school district where the well was located.

The goal of excluding fresh water from the producing zone carried through to the following subsequent legislative acts:

Continued on Page 7
PCPG’s GOVERNMENT AFFAIRS COMMITTEE (GAC) UPDATE

Mark Ioos, P.G. (Skelly & Loy)

PCPG’s GAC follows legislative action in both the House and Senate. The following bills of interest to geologists are being tracked. A more inclusive list of current bills is included on PCPG’s website, under Government Affairs (click on “Members-Only content”).

Legislative Bills

House

• Environmental Resources & Energy committee
  
  

• Professional Licensure committee
  
  **HB 92** – Granting State Licensing Boards the Power to Expunge Technical Violations; legislation submitted on January 21, 2015, Approved by Committee vote on April 1, 2015; Passed House vote on April 21, 2015 (194-0); Referred to Consumer Protection and Professional Licensure committee in the Senate on May 1, 2015.
  
  **HB 209** – Requiring all licensees to report convictions within 30-days; legislation submitted on January 23, 2015; Passed House vote on February 25, 2015 (198-0); Referred to Consumer Protection and Professional Licensure committee in the Senate on February 27, 2015.
  
  **HB 802** - Carryover of Continuing Educational Credits; New legislation to amend Act 48 of 1993 (Bureau of Professional and Occupations Affairs Act) restricting the carryover of excess CE credits for one biennial renewal term only. Proposed legislation submitted on March 17, 2015. No Action.
  
  **HB 1253** - Continuing Education Restrictions; Introduction of new legislation that changes current exemptions and cleans up some loose continuing education language. Change #1 - proposes to eliminate the broad exemption from licensure for engineers that work in industrial settings whether or not the engineering work affects safety, health or welfare. Change #2 - replaces antiquated terms like “correspondence courses” and “tutorials” with “distance learning”. Proposed legislation submitted on May 28, 2015. No Action.

• Consumer Affairs committee
  
  **HB 48** – Water Well Construction Standards; proposed legislation submitted on January 21, 2015, Public hearing was held on May 12, 2015. Passed Committee Vote (26-0-1) on June 24, 2015. New printer number PN 1884. Re-reported to the committee on, July 21, 2015.

• Labor and Industry
  
  **HB 430** - Mechanics’ Lien Law of 1963; Reintroduction of legislation expanding Pennsylvania’s Mechanic Lien Laws to add design professionals as a group that would be able to place a lien on a property if they are not paid for their work. Proposed legislation submitted on February 10, 2015. No Action.

Senate

• Environmental Resources & Energy committee
  
  **SB 571** - Critical zones for surface water intakes and wellhead protection areas; Reintroduction of legislation mandating the establishment of local zoning rules to include wellhead protection ordinances and/or surface water protection ordinances. Proposed legislation submitted on March 2, 2015. No Action.
  

Continued on Page 9
Daytrips to Outstanding Geologic Settings in Pennsylvania
Ricketts Glen State Park, Benton, PA
John Torrence, P.G., ERM

Park Entrance Address: 695 PA-487, Benton, PA 17814

Pennsylvania has many outstanding geologic settings that for me have become destinations for day trips. These day trips are a great excuse to get out and do something fun, teach my family and friends about geology and get some exercise all at the same time. Many of these destinations are off the beaten path, tucked away within state parks, which in addition to being interesting, also provide helpful comforts such as parking areas, trail maps and facilities. One such destination is Ricketts Glen State Park, which resides on an escarpment in northeastern PA, north of Interstate 80.

Ricketts Glen State Park is about 13,000 acres in size and is located on the Allegheny Front in between the Allegheny Plateau to the north and the Valley & Ridge to the south. Known for the dense old growth forests that are present within the Park, Ricketts Glen is also known for the abundance of waterfalls that follow a steep gorge created by Kitchen Creek. Years ago glaciation increased the flow of the water in Kitchen Creek which consequently increased the rate of erosion allowing the “Y” shaped gorge to be carved. Today, according to the DCNR’s Ricketts Glen State Park web page, there are 22 named waterfalls of which Ganoga Falls, the highest, drops 94 feet.

The entrance to Ricketts Glen is on State Route 487. The Visitors Center is near this entrance and is a great place to pick up a trail map and begin your day. On the day of my family’s visit, we decided to start at the Lake Rose Trailhead, located in The Glens Natural Area, to hike the Falls Trail.

Falls Trail is a loop trail that takes you past many of the named waterfalls and outstanding geologic features in the Park. We started the daytrip by hiking Old Beaver Dam Road Trail heading south. This trail is relatively easy to hike and is well blazed. We passed the Highland trail and then came to the intersection with Falls Trail. The change in elevation was apparent fairly quickly as we began hiking down the Falls Trail. Initially tan sandstone and conglomerate outcrops of the Mississippian Period Pocono Formation were present followed by the Late Devonian-Early Mississippian Period Huntley Mountain Formation, which was composed of gray sandstone interbedded with reddish shale. One interesting highlight was finding a large slab of fine grained sandstone that had glacial striations on it (see photo). The slab was eroded from above and randomly transported to where it sits today, on the ground adjacent to Kitchen Creek.

As we continued down Falls Trail I noticed other keys to the past in the form of cross beds and ripple marks. The vertical drop was around 1000 feet when we reached the Kitchen Creek confluence at Waters Meet, the lowest elevation of Falls Trail. Waters Meet is located at the top of the Devonian Period Catskill Formation which is composed of interbedded sandstone, siltstone and shale. We crossed Kitchen Creek using the wood bridge and began hiking up the other arm of the “Y” shaped gorge. This uphill hike was not as steep as the hike down but was still challenging. We hiked up the trail passing more waterfalls and outcrops until we intersected with the Highland Trail. The Highland Trail leads back to the Lake Rose Trailhead. Along this stretch of our day trip we passed the Midway Crevasse which is a very large boulder with narrow passage through it. The boulder is a block of tan Pocono sandstone and conglomerate, one of many in this area. The blocks split off the ledge above and landed in their current positions. After walking through the Midway Crevasse it was a short hike back to the car.

Continued on Page 7
Rickets Glen Continued from Page 6

In addition to hiking trails, Rickets Glen activities include boating (electric motors only), fishing, hunting, horseback riding and camping. In the winter, the park is open and available for cross-country skiing, snowmobiling and ice fishing. DCNR’s Pennsylvania Trail of Geology Park Guide 13 provides detailed geologic information and is found at: http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_015919.pdf.

A sandstone boulder with cross bedding found along the Falls Trail.

Glacial striations seen on a slab of Mississippian Period Pocono Formation sandstone eroded from the ledges above and now located along the bank of Kitchen Creek.

One of the many waterfalls visible along the Falls Trail.

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HISTORIC WELL PLUGGING Continued from Page 3

Act 101 of 1881, approved on June 10, 1881;

Act 32 of 1885, approved on May 29, 1885 which required that natural gas wells also be plugged similarly to oil wells;

Act 332 of 1921, approved on May 17, 1921 – By this year, plugging legislation had become much more detailed, and the following requirements (among others) were put in place through the repeal of previously described acts of 1878, 1881, and part of the act of 1885:

• Zones of “marketable” coal which had been drilled through required installation of a vent pipe which was to be cemented in place.

• Oil and gas wells in certain producing formations (the Bradford, Kane and Haskell sands) were allowed to remain open (i.e., unplugged) for purposes of secondary recovery by air, gas, water or other liquid pressure, as long as no other formations above or below the specified sands were affected.

Violations of any of the provisions of this act could result in a fine of $1000 and a maximum one year jail sentence.

Act 88 of 1923, approved on May 1, 1923 and Act 352 of 1929, approved on April 26, 1929 – These acts amended that of 1921 described above by expanding those wells located in certain producing formations and allowed to remain open for secondary recovery purposes to include the Ball Town, Clarendon, Cherry Grove and Glade Sands.

Gas Operations Well-Drilling Petroleum and Coal Mining Act of November 30, 1955 (later repealed on December 19, 1984 under the “Oil and Gas Act”) – This act created the Oil and Gas Division of the Department of Mines, and for the first time, required that wells be platted and permitted prior to drilling. It spelled out much more specific plugging requirements and also required that both a notice of intention to plug a well and a post-plugging certificate be filed with the state.

The PA Department of Environmental Protection’s (PA DEP) website lists additional information on oil and gas statutes and regulations enacted since 1955 which continue to evolve in response to changes in the oil and gas drilling industry, and can be found at the following link: http://www.portal.state.pa.us/portal/server.pt/community/office_of_oil_and_gas_management/20291

PDF copies of the 1881, 1885, 1921, 1923 and 1929 legislative acts can be found on PCPG’s website at http://www.pcpg.org/3Q2015/Randolph.
What Path Will You Take?

Identifying, interviewing and securing your first job in your major may seem like a daunting effort. Now after four years or more the inevitable is upon you. As you begin your search, first take a step back and consider the three broad categories of employers that offer opportunities:

1. Public sector
2. Private sector
3. Yourself

The public sector is government whether State or Federal or even local government. Here you may find yourself with field inspection, submittal review and compliance enforcement responsibilities as well as some limited sampling and data collection. There are times when you may be on the forefront of emerging issues or highly visible situations. If you are leaning toward more scientific responsibilities, government agencies like State Geologic Surveys, the USGS or Forest Service are options. In the public sector you are likely to be salaried and your work week is defined at 40 hours. It’s likely that you will be part of a collective bargaining unit where performance reviews follow strict guidelines and pay scales and salary increases are pre-determined. News stories about controlling government spending are frequently in the news and budget shortfalls have an impact on government program staffing and funding. Quasi-public organizations like publically funded colleges and universities, watershed groups or other natural resource non-profit organizations can be lumped into this sector although some may argue that they represent a fourth sector.

The private sector is engaged in commerce whether extractive businesses engaged in energy or resource production, product manufacturing, or service delivery including consultants to those businesses engaged in commerce. Here you may find yourself spending a fair amount of time in the field doing data collection or contractor oversight in support of the company’s production goals or compliance requirements. Depending on the business you may find opportunities for travel ranging from overnight to international. You are likely to be salaried with the potential in some cases for paid overtime. Your work week is likely to be at least 40 hours or more. Compensation may include bonus or stock ownership, and pay scale and salary increases are likely to be tied to company performance. The success of a company or industry sector is determined in part by market forces which can impact budgets and hiring opportunities.

Yourself is self-employment. You may have a skill or idea for a service that is better or faster or less expensive than what is currently available to the public and private sectors. You’ll do what you enjoy, assuming there is a demand for it. You’ll be able to work when you want and take off when you want. Unfortunately, eating and repaying school loans are not optional so you may find yourself working much more than 40 hours per week to get things going. Depending on your skill/service you may be in the field or in the office on a computer or both. Your geologic or science skills will build your business, but it won’t succeed without some accounting and marketing needs met as well. If you have an entrepreneurial spirit then go for it. The Mark Zuckerberg of the geologic and environmental science professions is out there somewhere.

The above represent broad categories of job opportunities, and cannot encompass all aspects of the variety of positions found in each category nor the various levels of responsibility as one progresses through their selected profession. Some may find one sector preferable to another and make it their career path. Others may find moving between categories serves their career ambitions best. But what is common to all and what serves you and your employer best is to do what you enjoy and do your best at whatever you are doing.

Please submit suggestions for future Student Corner articles to Dr. Martin Helmke at mhelmke@wcupa.edu.
GAC UPDATE Continued from Page 4

• Consumer Protection and Professional Licensure committee
  
  **SB 845** – Licensure of Soil Scientists; proposed legislation submitted on May 20, 2015. No Action.
  

Status of Proposed Biennial Renewal Fee Increase

At its March 12, 2014 meeting, the State Registration Board for Professional Engineers, Land Surveyors and Geologists (Board) voted to increase biennial renewal fees for professional engineers, land surveyors, and geologists from $50 to $100. The purpose of the increase is reportedly to cover operating expenses of the Board through at least the 2021-2023 biennial renewal period. The PCPG submitted comments regarding the proposed increase biennial renewal fees to the Board on June 12, 2015. A decision regarding the monetary increase of the biennial renewal fees and the implementation date has not yet been made by the Board. It is anticipated that the fee increase will be implemented with the September 30, 2017, biennial renewal period.

Draft Technical Guidance for Vapor Intrusion

On Saturday July 25, 2015, the Pennsylvania Department of Environmental Protection (“PADEP”), Bureau of Environmental Cleanup & Brownfields Land Recycling Program published a notice in the Pennsylvania Bulletin announcing proposed substantive revisions to the draft guidance document Land Recycling Program Technical Guidance Manual for Vapor Intrusion into Buildings from Groundwater and Soil under Act 2 (261-0300-101). The proposed changes to the assessment/mitigation of potential vapor intrusion (VI) issues related to volatile organic compounds (VOCs) and certain semi-volatile organic compounds (SVOCs) from soil and/or groundwater sources will have broad impacts for sites undergoing remediation via 25 PA Code Chapter 250, The Land Recycling and Environmental Remediation Standards Act.


Joint Legislative Committee Meeting November 2015

PCPG participates in quarterly meetings with representatives from the Pennsylvania Society of Professional Engineers (PSPE) and the Pennsylvania Society of Land Surveyors (PSLS). This “Joint Legislative Committee” exchanges information about legislative bills, court cases, pending regulatory changes/procedures that have the potential to impact how professional geologists, engineers, and land surveyors practice their professions in the Commonwealth of Pennsylvania. The meetings are conducted in Harrisburg.

Discussion at the most recent meeting included planning efforts for PCPG, PSPE, and PSLS members to jointly participate in a “Legislative Day” at the capital in April 2016. The purpose of the “Legislative Day” will be to meet members of the legislature and demonstrate solidarity regarding issues affecting our professions. The next Joint Legislative Committee meeting is scheduled at 12:00 PM on November 20th, 2015 in Harrisburg. If you are interest in attending (lunch is provided) please contact Mark Ioos, Chairperson PCPG Government Affairs Committee at mioos@skellyloy.com.

Interested in the PCPG GAC?

Historically the GAC has been involved with disseminating new regulatory information to members, providing testimony on new policy and legislative bills, and interacting with members of the Professional Engineering and Land Surveying professions on joint legislative issues. If you would like to become involved with the GAC, please contact Mark Ioos, Chairperson PCPG Government Affairs Committee at mioos@skellyloy.com.
PCPG’s Associate Members for 2015:

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Eichelbergers, Inc.
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Hi-Tech Soil Stabilization LLC
Contact: Desiree Sunday (717) 664-4006

Don’t Forget to Contribute to the PA GEOPAC!

Through PA GEOPAC, the official political action committee (PAC) of PCPG, you have an effective way to lend financial support to candidates and legislators who support the legislative goals of our organization, or who are willing to lend an ear to our members. More than 200 trade and professional organizations in the state have formed PACs including doctors, lawyers, bankers, and builders.

Your donation will help to strengthen our voice when and where it is needed most...right now at the state Capitol, where decisions are being made regarding many topics that affect the business of geology in Pennsylvania.

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Contributions may be made by personal check or company check only if from a sole proprietorship or partnership. Otherwise, no corporate or business checks may be accepted.

Deadline for our Next Newsletter is November 20, 2015

For more information, contact our PCPG Newsletter Editor and Communications Committee Chairperson - Valerie Holliday, P.G., by Email or telephone at 610-517-7898.

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