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Can you identify this  
feature? See page 7.



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## Message from the President

Through the first half of 2011, the Pennsylvania Council of Professional Geologists (PCPG) has continued to provide advocacy, education, and networking in support of the Pennsylvania P.G. This newsletter includes committee reports, networking recaps, and an article to introduce you to our newly-elected Board members. There is also an interview with George Love the new Pennsylvania State Geologist with the Bureau of Topographic and Geologic Survey (BTGS). Be sure to read the article that asks the questions, "Do I need a Geology Degree to Get at P.G.?"

The PCPG Board of Directors, our committee members, and their chairs are a big reason for the continued success and momentum of this organization. If you have time and wish to support and contribute to a committee please contact me or the committee chair directly and let us know of your interest.

PCPG has provided thirteen educational courses for the PA P.G.'s to date in 2011. Additional courses will be held by PCPG in the second half of 2011.

PCPG has also held networking opportunities in the western, central, and eastern parts of PA. These networking opportunities give our members an opportunity to find out firsthand what PCPG is doing from face-to-face discussions with the attending Board members. It also gives the members an opportunity to talk directly to Board members on issues that are important to them. Members can also "network" with old and new contacts, which can lead to future teaming or subcontracting opportunities. Additional networking opportunities will be held later in 2011. In addition, after the PCPG Board meeting on the morning of October 20, 2011, we will host several speakers to talk on a variety of topics relevant to the PA P.G. Plans are still being finalized, so be sure to watch for more information in the News Updates and 3<sup>rd</sup> Quarter Newsletter.

Opportunities for networking, education and advocacy will continue to be publicized in our email News Updates, Quarterly Newsletters, and the PCPG website ([www.PCPG.org](http://www.PCPG.org)), so be sure to check them out.

Regards,

**Jeff Leberfinger, P.G.**

PCPG President



## PCPG Member Companies Present at NGWA Ground Water Summit in Baltimore

-- Louis F. Vittorio, Jr. P.G., (PCPG President-elect) and Jennifer O'Reilly, P.G. (PCPG Board Member)



PCPG member company employees Richard Evans, P.E. of Groundwater & Environmental Services, Inc. and Matthew S. Weikel, P.G. of EarthRes Group, Inc. were among those presenting at the 2011 NGWA Ground Water Summit in Baltimore on May 1<sup>st</sup> through the 5<sup>th</sup>. The conference brought together a mix of regulators, groundwater practitioners, managers, policymakers, stakeholders and other professionals to interact on many water-related issues.

The theme of the summit was *"Meeting Groundwater Challenges in Uncertain Times,"* and the focus was the critical need for cooperation and collaboration on groundwater resource issues. One of the featured conference speakers was Martin Storksdieck, Ph.D. from The National Academies who provided a talk entitled:



Matt Weikel, P.G., presenting at the 2011 NGWA Ground Water Summit.

*"Selling Sound Science: Kindergartner to Policymaker."* His talk hit the mark as education and practicing sound science are key components of PCPG's message.

Mr. Weikel presented a talk entitled, *"The Baseflow Recession Constant as a Tool for Water Availability Analysis."* Mr. Weikel's presentation demonstrated the usefulness of the baseflow recession constant in water availability investigations, and how this simple and versatile hydrogeologic parameter is available to the groundwater practitioner. Matt's presentation abstract can be found on-line here:

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### below ground services Inc.

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<http://ngwa.confex.com/ngwa/2011gws/webprogram/Paper7817.html>

Mr. Evans presented a talk entitled, "*Chemical Oxidation – Applications in Fractured Bedrock.*" Mr. Evans' presentation demonstrated how in-situ chemical oxidation (ISCO) can be useful for petroleum hydrocarbon and chlorinated solvent impacted fractured-bedrock sites, and the key role that conceptual site models and feasibility testing play in the implementation of a successful remedy. His talk also touched on the effectiveness of remediating the identified receptors from both source area remediation using ISCO with hydrogen peroxide and ozone and the resulting extended dissolved oxygen plume. Richard's presentation abstract can be found on-line at:

<http://ngwa.confex.com/ngwa/2011gws/webprogram/Paper7631.html>

If you are interested in learning more about the conference, details of the conference are available on-line at:

<http://www.ngwa.org/summit2011/>

PCPG encourages member participation in national organization such as NGWA to help further education and research related to Pennsylvania and national topics.

Should you wish to present and further represent PCPG at an industry seminar event, please let us know the event details by contacting us at [info@pcpg.org](mailto:info@pcpg.org).

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## An Interview with... George Love, P.G.

-- Kelly Lee Kinkaid, P.G. (PCPG Communications Committee Chair)

As a regular feature to our quarterly newsletter, the PCPG Communications Committee interviews prominent geologists in the Pennsylvania area. This quarter we interviewed George Love, the Pennsylvania State Geologist and Director of the Pennsylvania Bureau of Topographic and Geologic Survey (BTGS). Our interview was conducted on May 26, 2011. At that time, Mr. Love had served as State Geologist for about seven months.

### Q. When did you first start employment at BTGS?

*A. I began working at the Survey in early November 2006 in a temporary mapping position. That lasted two weeks before I was offered a permanent, full-time position as a geologist. Just six months later I was promoted to Assistant State Geologist when Sam Berkheiser retired. When Jay (Parrish) left last year, I interviewed with John Quigley (former Chief of DCNR) and became State Geologist.*

### Q. That was a quick rise. What was your professional experience before coming to the BTGS that qualified you for that position?

*A. Well, I don't know that I'd say it qualified me, but after obtaining my M.S., I worked for General Analytics for about three years (doing engineering and geo-engineering work) before taking a position with Dravo Corporation of Pittsburgh. That job was fun as it ranged from exploration for precious metals to foundations for large structures such as power plants and dams. After 10 years I wanted some stability – that is less travel – so I went to work for Mobil Corporation in their phosphate mining operations in Florida. I worked various positions in mine exploration, planning, operations and reclamation over my 15 years with Mobil. When Cargill purchased Mobil's phosphate mining operations in the late 1990's, although they asked me to stay on and run their mining operations, I took that opportunity to escape from the Florida heat and seek employment in a cooler climate. I accepted a position as Vice President of Geological Services with Carmeuse N.A. (formerly Dravo) in Pittsburgh, PA, and ultimately added the environmental aspects of the permitting activities to my duties. Working underground in limestone mining was a fascinating experience. By 2006, I had had enough of the non-geologic aspects of the job that retirement looked like a good option. While considering my options, I took a temporary mapping position with the BTGS mentioned above, and as they say, "the rest is history."*

### Q. You mention that you received an M.S. degree. What is your education?

*A. I originally began college at Drexel University as a physics major, but after one year, I was "sold" to the Atomic Energy Commission in New York City. That work did not suit me, so I quit school and went to work in the construction industry for about a year before returning to college. I ended up attending Penn State, receiving a B.S. in Geological Sciences, and then attended Franklin and Marshall College in Lancaster, PA, where I received my M.S. in Geology with a specialty in carbonate stratigraphy.*

### Q. What do you enjoy most about working at the BTGS?

*A. The people...I really enjoy working with the folks at the Survey and in DCNR. They are a dedicated and hard-working group of people.*



*George Love, P.G. State Geologist and Director of the Pennsylvania Topographic & Geologic Survey.*



**Q. What have you found is your biggest challenge in the position of State Geologist?**

*A. As the budget continues to decrease, we have fewer staff members (42 people when I came to BTGS five years ago and 35 now). So, I would say that my biggest challenge is maintaining the staff we have, and using the funds that we are allotted (and can get through grants) to address issues that the BTGS views as important.*

**Q. What are those issues that the BTGS views as important?**

*A. Water issues are big and will likely be larger in the future. Where is the water? What is its quality? What is the depth of potable water? Is there a basis to the concerns with fracking at depth and will this water return to the surface in the future? The BTGS needs to do scientific studies and prepare adequate data to be used by everyone to determine the facts instead of drawing conclusions based on assumptions.*

*Coupled to that, the BTGS needs to focus on broad-scale investigations that look at the natural resources Pennsylvania has and for which there are current or potential future needs. We do not compete with consultants, but we should serve as a useful tool to those in the geologic consulting industry. There are a number of industrial minerals and aggregates present in Pennsylvania, and there needs for regional evaluation of rocks near surface that could be used to meet those applications.*

**Q. Do you have any other area of interest that you'd like to see developed?**

*A. It would be wonderful if the BTGS could look for some of the more exotic minerals present in Pennsylvania. One hundred years ago chromite and other ores were recovered in small mines. Rare earths, for example, occur in old Pennsylvania mines, and may afford some opportunities to support small-scale mining operations in the future. To be sure, more investigation into their distribution and abundance is needed to attract this industry to the State.*

**Q. Have there been any changes at the BTGS since you took over last year?**

*A. We've done some re-organizing. We now have a Groundwater and Environmental Geology Section, headed by Stuart Reese under the Geologic Mapping Division. This group focuses on things like groundwater quantity/quality and recharge issues. The Mapping Division continues its focus on geologic mapping. New maps are informed by the new Lidar data collected by the PAMAP program, to generate higher quality geologic maps and much more detailed terrain maps. In Pittsburgh we have the Mineral Resources Division that is evaluating hydrocarbon potential in Pennsylvania. One new tool/project for them is equipment that allows us to examine the vitronite reflectance of organic material. We've also formed a Geologic and Geographic Information Services Division that handles GIS activities and website management.*

*I don't think all the changes have made it to the website yet. It's a work in progress. If you link to:*

*<http://www.dcnr.state.pa.us/topogeo/about/index.aspx>*

*Then click on the Staff Directory tab, you will find our staff directory, and you should be able to locate someone to help you with specific questions there.*

**EDITORS NOTE:** Please check out Page 13 of this newsletter for an update on the current activities of the BTGS.



## SPRING SCIENCE FAIR REPORTS

### Delaware Valley Science Fair (Gary Kribbs, P.G., PCPG Board Member, AEON Geoscience, Inc.)

The Delaware Valley Science Fair (DVSF) was held this past April in Philadelphia with nearly 1000 exhibitors, and the earth science field was represented more strongly than it had been in recent years. This was the 63<sup>rd</sup> year for the DVSF competition, which was designed to be a vehicle for stimulating interest in science, technology, engineering and mathematics among students in middle and high schools in the tri-state area.

To be eligible to compete in the DVSF, students must first compete in one of many regional fairs in southeastern Pennsylvania. Selected students from the regional fairs then go on and compete in the DVSF.

The judging for PCPG was done by Gary Kribbs, P.G., Scott Laird, P.G. and Grover Emrich, P.G. The PCPG Earth Science First Prize went to Annabel Imbrie-Moore for her entry "*A Phase Space Model for the Pleistocene Ice Volume*." Annabel is an 11th grader at St. Andrew's School and a repeat winner from last year. Honorable Mention went to Sara Cobb of the Downingtown Middle School for her entry "*Tsunami Waves*". Sarah presented a focused scientific method we rarely see, including a composed organized verbal delivery. On top of that she is a 6th grader!

You can view the full list of winners at: <http://www.drexel.edu/dvsf/winners.htm>

If you want to learn more about the DVSF, link to their website at: <http://www.drexel.edu/dvsf/index.htm>

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## UPCOMING EVENTS

July 20, 2011

**Surface Geophysics  
Hydro-Geological &  
Geotechnical Applications**  
Harrisburg, PA

July 28, 2011

**Act 2 Toolkit Series  
Environmental Statistics**  
Monroeville, PA

August 16, 2011

**Act 2 Toolkit Series  
Fate & Transport Modeling**  
Malvern, PA

August 23, 2011

**Structural Geology &  
Hydro-Structural Geology  
Theory & Application for the  
Practicing Professional**  
Harrisburg, PA

September 7 - 8, 2011

**Shale Gas Insight™ 2011**  
Philadelphia, PA  
<http://shalegasinsight.com/>

September 27 - 28, 2011

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October 20, 2011

**PCPG Board Meeting  
(plus Education/Networking)**  
Monroeville, PA

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Don't forget to check the  
"Courses & Events" link on  
PCPG's [home page](#)  
frequently for up to date  
information on upcoming  
educational opportunities.

## PCPG Education Committee Offers Volunteer Opportunities for Members

-- Jennifer L. O'Reilly, P.G. (PCPG Education Committee Chairperson)

The PCPG Education Committee has recruited some new members! I would like to welcome Tracy Jeremias (Terra Structures), David Perry (American Geosciences, Inc.), Janet Bowers (Chester County Water Resources Authority), and Peter Chronowski (Apex Companies, Inc.) to the team! The next challenge, as we move into the next license renewal cycle starting in September 2011, is to expand upon our variety of technical seminars and to forecast our education schedule for 2012. We can always use additional help, so if you have an interest in becoming an Education Committee member, please email me ([Jen O'Reilly E-mail](#)).

As the current license renewal period draws to a close, we have a handful of courses left that will provide opportunities to obtain some last-minute PDHs. PCPG's final Pittsburgh-area, Harrisburg-area, and Philadelphia-area events ahead of the September 30, 2011 license renewal deadline are:

- Surface Geophysics (Harrisburg) on July 20
- Act 2 Toolkit / Environmental Statistics (Monroeville) on July 28
- Act 2 Toolkit / Fate & Transport Modeling (Malvern) on August 16
- Structural Geology & Hydro-Structural Geology (Harrisburg) on August 23

Looking toward the fourth quarter of 2011, we will hold a Board Meeting on October 20 (in the Pittsburgh area), and will be inviting guest speakers to present on Shale Gas and other topics. In addition to this event, we will be expanding our Act 2 Toolkit series to include a seminar on Soil Gas and Vapor Intrusion and are working with PADEP to compile the course material and presentation.

We hope to see you at one of our upcoming seminars. If you have any questions or suggestions for courses or events, please feel free to email me ([Jen O'Reilly E-mail](#)). For more information or to register for upcoming courses, please link on the "Courses and Events" tab of our [home page](#).

### GUESS THE FEATURE

Were you able to guess the feature on Page 1? It's a photograph of the River of Rocks at the Hawk Mountain Sanctuary in Berks County. According to the Hawk Mountain website, this feature is a mile-long stretch of boulders that extends 30 to 40 feet deep in places and was formed during the last ice age. Periglacial processes cracked boulders from the ridgetop and they gradually slid to their current position. You can learn more about the Hawk Mountain Sanctuary on their website:

[www.hawkmountain.org](http://www.hawkmountain.org)



## PCPG Hosts “Mentoring Lunch & Learn” at West Chester University

-- Gary Kribbs, P.G. (PCPG Board Member, AEON Geoscience, Inc.)

On April 14, 2011, Merion Hall at West Chester University (WCU) hosted what will hopefully be the first of many PCPG-sponsored networking luncheons. The event was dubbed the, “Mentoring Lunch & Learn,” and was co-sponsored by the WCU Department of Geology & Astronomy and PCPG.

The room was packed with students, faculty, consultants and even an agency representative. The luncheon agenda had planned to feature short talks on topics in the areas of Energy, Environment & Education. The specific topics included: *The Marcellus* by Ms. Valerie Holliday, P.G.; *Geothermal Energy* by Dr. Martin Helmke; and *Education* by Dr. Timothy Lutz. Unfortunately, as one might guess, the Marcellus topic was so hot with questions that our second and third speakers graciously stepped aside to allow the Marcellus discussion to continue. The dialogue for the entire luncheon session was lively and informative. Discussions about Marcellus current conditions and the future were extensive. Job discussions were intertwined with the science of gas exploration, the “new” aspects of horizontal drilling and the real facts of hydrofrac’ing. After the session, additional discussion and interaction was continued in other rooms only because a college class needed the room.

The PCPG Networking Committee is planning a mid-September 2011 networking session at Temple University and another session in the Lehigh Valley for the October or November time frame. The topics and specific locations are currently being determined.

The reason for PCPG to offer these sessions is two-fold. One is to network with other scientists whether they are consultant, agencies or academics; but we are also there for the student interaction. Many students are not aware of all the areas where a geological background is an essential part of a job and society. We can convey that message. These students are next season’s job applicants. PCPG efforts will also help convey a message to the college’s administration of the importance of core geology course work and how essential it is to science and our industry. So watch for notices this summer about the September Networking Luncheon at Temple University and for future events coming in the fall.

## SPRING SCIENCE FAIR REPORTS (continued from page 6)

### North Museum Science & Engineering Fair (Dr. Jay Parrish, Penn State University)

The 58<sup>th</sup> North Museum Science & Engineering Fair was held on March 28 – 30, 2011 on the campus of Franklin and Marshall College. Twenty-five public and private schools in Lancaster County were represented by 350 middle school and high school students, who displayed finished projects in 22 categories. In addition to the category awards, 50 organizations sent representatives to judge and present auxiliary awards. Dr. Jay Parrish, Penn State Professor of Geophysics, represented PCPG and judged the auxiliary award sponsored by PCPG.

Although there were a limited number of geology-related submissions at the high school level, geology was well represented at the middle school level. The middle school entries covered a wide range of environmental issues as well as geophysical and structural problems. The PCPG award was split, with each recipient receiving \$100. The first recipient was Isaac Von Nieda for a classic clay model demonstrating faulting and folding that he had constructed himself, entitled, “*How Will Layers of Sand Deform Under Lateral Compression?*” Isaac is a 7<sup>th</sup> grader at Our Mother of Perpetual Help in Ephrata. He also expressed some ideas about the results that demonstrated an inclination toward science.

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At the high school level, Megan Smith offered an entry entitled, "Nitrate Content in Leachate from Duffield, Hagerstown, and Clarksburg Silt Loams." Megan attends Conestoga Valley School District.

There were awards given by the local judges for other excellent projects. However, there appeared to be significant parental involvement in those entries. As a result, the PCPG judge selected the winners of our awards based on a conviction that Megan and Isaac represented the true future of our field and that they deserved all the encouragement we could afford.

### **Capital Area Science & Engineering Fair** (J. Neil Ketchum, P.G., Groundwater Sciences Corp.)

Forty-five middle schools and high schools from the Capital Region were represented at the Capital Area Science and Engineering Fair, held at the Whitaker Center for Science and the Arts in Harrisburg on March 2 - 5, 2011. Over 300 projects were entered in the Junior and Senior Divisions, including several with geologic and hydrogeologic components. One winner was selected from each division to receive the PCPG award. The award recipient from the Senior Division was Scott Breen of Cumberland Valley High School. Mr. Breen looked at the potential impacts on springs from road salt deicing in his project titled, "Does a Little Salt Go a Long Way." Scott's project was exceptional, in part because of his strong understanding of the data and analyses and the large field data set that he collected. The Junior Division award was given to Amy Crumlich of Susquenita Middle School for her project titled "Fizzy Rocks." Ms. Crumlich looked at the role of temperature in chemical weathering of carbonate minerals. During the interview, she showed a strong understanding of the scientific method by listing ways to improve her experiment in the future, and showed a genuine interest in science - especially geology.



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## Meet the New PCPG Board Members

-- Kelly Lee Kinkaid, P.G. (PCPG Communications Committee Chair)

When the election results were announced at PCPG's Annual Membership Meeting on January 20<sup>th</sup>, we learned that three new members were elected to the PCPG Board of Directors. These three new members include: George Hunzeker, P.G. (Letterle & Associates, LLC), Gary Kribbs, P.G. (AEON Geoscience, Inc.), and Ethan Prout, P.G. (Rettew Associates). Re-elected to the Board were incumbents Kelly Lee Kinkaid, P.G. (Liberty Environmental, Inc.) and Donald Wagner, P.G. (Stevens & Lee, PC). A little background information on each of these three new members is provided in the following paragraphs.

### GARY KRIBBS, P.G.

Gary returns to the Board, after previously serving as a Director from 2001 to 2007 and as PCPG President in 2006 and 2007. He has almost thirty years of experience directing and implementing a wide-range of geologic, hydrogeologic (water resources), engineering geology, mining geology and environmental investigations, and currently serves as President and Principal Geologist for AEON Geoscience, Inc. located in Havertown, PA. Gary holds a B.A. in Geology and an M.S. in Geology from the Univ. of Toledo, and is a P.G. in four States PA, DE, TN & TX. In addition to serving on the PCPG Board, he also serves as the P.G. representative on the Delaware Regional Water Resource Committee, is a Board Member of the DCNR-Conservation and Natural Resource Advisory Committee (CNRAC), and is an Adjunct Geology Professor for LaSalle University.



*Gary Kribbs, P.G., President of AEON Geoscience, Inc. and newly-elected PCPG Board member.*

### ETHAN PROUT, P.G.



*Ethan Prout, P.G., Senior Project Mgr. with RETTEW Associates Inc. and newly-elected PCPG Board member.*

Ethan has over 14 years of managerial and technical experience in numerous multidisciplinary projects, and is currently employed as a Senior Project Manager and Hydrogeologist by RETTEW Associates, Inc. in their Lancaster, PA office. He primarily manages and provides technical support for shale gas-related surface water and groundwater sourcing, hydrogeologic and water quality projects, and provides various upstream and midstream support for E&P companies in Pennsylvania. Ethan holds a B.A. in Geoscience from Hobart and William Smith University and an M.A. in Geology from Temple University. In addition to serving on the PCPG Board, he also serves on the Doylestown Township Environmental Advisory Council/Shade Tree Commission, is a member of the Water Sourcing and DRBC Sub-Committees of the Marcellus Shale Coalition, and is a member of the ASTM D18.21 Committee (Groundwater and Vadose Zone Investigations).

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**GEORGE HUNZEKER, P.G.**



*George Hunzeker, P.G., Vice President of Letterle & Associates, LLC, and newly-elected PCPG Board member*

George has over 23 years of experience in the environmental consulting industry, managing and performing various aspects of environmental site characterization and remediation, with a strong emphasis on storage tank and voluntary corrective action projects in Pennsylvania, West Virginia and Texas. In addition to being a Pennsylvania-licensed Professional Geologist., he is also a Licensed Remediation Specialist (LRS) in West Virginia, and currently serves as the Vice President and Chief Technical Officer for Letterle & Associates, LLC in Allison Park, PA. George holds a B.S. in Geology from the University of Pittsburgh and an M.B.A. from Robert Morris University.



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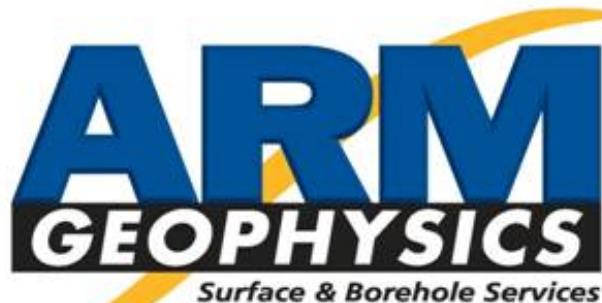
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## Do I Need a Major in Geology to Qualify to Sit for the P.G. Exam?

-- Louis F. Vittorio, Jr. P.G. (PCPG President-elect)

The most common answer to this question, according to Pennsylvania regulations and the National Association of State Boards of Geology (ASBOG®), is "Yes." However, there are exceptions, which is a good reason why there is a State Licensing Board to evaluate applications for P.G. licensure.

As stated in the "Eligibility for Licensure" section of the regulation (49 Pa. Code Chapter 37.36): "An applicant shall submit evidence to the Board of having graduated from an accredited institution of higher learning with a major in geology, geophysics, geochemistry or engineering geology, with a minimum of 30 semester or 45 quarter hours in geology, geophysics, geochemistry, engineering geology or their subdivisions." The regulation (as paraphrased) further goes on to specify that if an applicant has graduated from a school that doesn't offer a degree in geology, but has the required credits, the applicant will need to certify that the school did not offer a degree in geology. In strict interpretation, this means that if you went to a university that offers a Geology degree, but you received an Environmental Science or other degree (even with the geological credit requirements satisfied through additional schooling), you would be ineligible take the P.G. exam.

As I think back on my degree, I can see the reasoning behind the wording in the regulations. My B.S. in Geology was much more than just geology courses. There were requirements for several semesters of chemistry, math, physics, other science electives and upper-level courses. Therefore, it seems that the regulation is meant to address non-science degreed individuals who may have since taken geology credits post-graduation. A sort of soft-shoe, end-around to getting a P.G., and likely something that was contemplated when the regulations were drafted.

(continued on Page 14)



# News of the Pennsylvania Bureau of Topographic and Geologic Survey (BTGS)

-- George Love, P.G. (Pennsylvania State Geologist)



## **Geothermal Data** – The BTGS is participating in a nationwide effort sponsored by the U.S.

Department of Energy to collect data on heat sources. The national effort is being organized and managed by the Arizona Geological Survey. Here at the Middletown BTGS office, Dr. Steve Shank is the project manager, although much of the work is being done in Pittsburgh under the watchful eyes of Ms. Kristin Carter and Dr. John Harper. We are compiling downhole temperature and related data reported on geophysical logs in the possession of the BTGS. Fortunately, the project includes funding to hire college students who are scanning, processing, and interpreting the paper geophysical logs housed in our Pittsburgh office. If another phase is funded in the future, we hope to collect temperature data in deep municipal wells and other deep sources, as available.

Although Pennsylvania is hardly a “hotspot,” the data will be used to develop and refine geothermal gradients throughout the state, and broadly throughout the country. More importantly, once all the data are entered into the database, they will be accessible to all for free. You can contact [Steve Shank](#) for more information on this project.

## **PAMAP Data** – The data collected in 2008 have been completely processed and placed on the PASDA website ([www.pasda.psu.edu](http://www.pasda.psu.edu)). This information includes both orthoimagery and Lidar products. The future of the program is unknown, but efforts continue to educate legislators with regard to the value of the data and why a programmatic renewal of the images is in the best economic interest of the Commonwealth.

Current efforts are directed toward the purchase of “new” orthos from vendors who have flown portions of the state either on speculation or for specific clients. Those data are generally confidential for some period, but can be made available to the public after a specific negotiated time. The images may not meet the same standards as originally required by the PAMAP program when it contracted for flights, but as the old adage goes, “something is better than nothing.”

## **Water Resources** – As mentioned in the past, the BTGS continues its effort to produce digital products on groundwater for the state. The Groundwater and Environmental Geology Section of the Geologic Mapping Division, supervised by Stuart Reese, is working on a statewide digital interpolation layer of the depth to groundwater. Once the data are available in digital form, GIS savvy users will be able to employ the data for a variety of products. In addition, the Section is working on the topic of the thickness of fresh groundwater in northern Pennsylvania. Contact [Stuart Reese](#) for more information.

## **Geologic Mapping** – State mapping efforts by the BTGS, sponsored by a grant from the USGS, continue. In addition to the physical mapping, a borehole will be drilled in northern Lebanon County during this summer/early fall to provide control for the mapping efforts. If successful, the data may also be of use in confirming velocities for the seismic line that was run in the area during the early fall of 2009. The borehole will be cored for a portion of its depth; however, due to limited funding, we may need to use air rotary drilling to advance to a specific depth, then core below. Drill cuttings will be collected from the interval where air rotary drilling is used. You can contact [Gale Blackmer](#) for more information on this project.



(continued from Page 12)

With that said, if you received a rigorous undergraduate degree in the sciences and have since gone on to graduate school, and/or night school and earned the required geology credits (and requisite experience), you should petition the State Licensing Board via your application to sit for the P.G. exam. I personally know of several individuals that have successfully received licensure through this route and who are excellent geologists.

In future Newsletters, we plan to include articles that address the course requirements to qualify to sit for the P.G. exam, and provide guidance to undergraduates who are ultimately striving to become licensed geologists in Pennsylvania.

## **DEADLINE FOR 3<sup>rd</sup> QUARTER 2011 NEWSLETTER IS SEPT 1, 2011**

For more information, contact our PCPG  
Newsletter Editor and Communications  
Committee Chairperson,  
Kelly Lee Kinkaid, P.G., by [E-mail](#) or by telephone  
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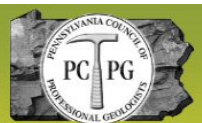
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