PCPG Newsletter

Communicating Key Information & Concerns to Geologists and Environmental Professionals

Issue 3 / 2017

Inside this issue...

Message from the President

Welcome to Fall!! Looking into my backyard, I see the leaves of the birch trees are starting to turn color. Typically, Fall always seems to feel like the beginning of a new year. Not a calendar year, obviously, but a school year. I guess that is programmed into us, each of our first 18 to 22 years on the planet. As Professional Geologists, we are on a similar schedule. Every second year, in the Fall, we need to re-register our license.

By now, hopefully, you have successfully renewed your license. As the Bureau of Professional and Occupational Affairs transitioned to an on-line renewal system, there were a few reported bugs. To quote roadside signs from PennDOT, this was likely a "Temporary Inconvenience for a Permanent Improvement." In the long run, however, making the license renewal process quicker and easier can only benefit our profession.

Fall splendor in the PCPG president's backyard.

With this licensing period over, the PG educational "season" begins again. Remain vigilant in your continuing education. As applied scientists, most geologists do indeed continue educating themselves, for the betterment of their practice, their clients and their companies. One important benefit of PCPG membership is that our continuing education program makes it quick and easy to get required PDHs. The PCPG bi-weekly news blasts and quarterly newsletters will give you early notice for course offerings, and your membership entitles you to registration fee discounts.

Fall also tends to be a new beginning for our local professional and scientific societies' activities

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General Information: info@pcpg.org

PCPG Field Trip to Carbonates and Karst in the York Area

Lead Author - Kurt Friehauf, Ph.D., P.G.
Assist - John Torrence, P.G.

On June 6, 2017 PCPG and fellow scientists went on an all-day field trip to two limestone mines in the vicinity of York, PA. The first stop was at the Magnesita Refractories surface quarry and the second stop was at the underground Pennsy Supply mine.

Stop 1 – Magnesita Refractories quarry area

Pinnacles of exhumed bedrock surface exposing the Ledger Formation dolostone were dug out by hand with shovels to produce fill soil for sale (figure 1). Seeing the depth of channels in this uneven bedrock surface was very thought-provoking, knowing similar surfaces lie beneath our feet in a lot of limestone country.

The exposed dolomite bedrock showed several features potentially relevant in the context of containment of infiltrating and dispersing groundwater contaminants. More dolomitic rocks in the sequence behaved in a more brittle fashion, so tectonic stresses during the Paleozoic orogenies fractured dolostones more thoroughly. This brittleness results in lowered RQD values and consequently reduced mining costs because the rock is already partially broken.

Another consequence of the highly fractured nature of the dolostone is greater dissolution by groundwater along fractures where the flow rates are higher (figure 2). Although fracture orientations were locally sheeted or subparallel, fracture orientations on a deposit scale were not systematic. Only broad 30-ft wide channels traversed the area parallel to the regional strike to bedding. Weathering along fractures and exposed surfaces of dolomite formed brown iron-oxide weathering rinds, either as a residual iron from small amounts of iron in dolomite structure or exotic iron transported by infiltrating groundwaters. A 1999 field trip guidebook article exists on this site for readers interested in greater detail.

Figure 1. Exhumed bedrock surface in karst

Figure 2. Dissolution along fractures in dolostone

Stop 2 – Overview of current Magnesita Refractories pit

Magnesita mines very high purity dolomite for use in refractory bricks (e.g., steel ladles and cement kilns). Impurities are exceptionally low (< 1% SiO_2, Al_2O_3, Fe_2O_3). This high purity is the primary factor in the value of the rock. Of secondary importance to rock value is grain size, with finer grained material being preferred because coarse-grained dolomite breaks more easily in the kiln.

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The target strata was deposited originally as an oolitic limestone, probably as shelf margin carbonates akin to the knee-deep waters of the Bahamas. Magnesium-rich brines then infiltrated through the oolitic shoals to make pure dolomite. Some microbial reefs/bioherms are present in the formation, but the reefs have low porosity and were consequently not dolomitized, forming blocks of uneconomic limestone waste (figure 3). A subsequent dedolomitization event also down-graded portions of the formation by converting dolomite back into a calcitic metasomatic marble (figure 4). This calcitic marble is avoided by the Magnesita mining operations, but is extracted by Vulcan Materials who work symbiotically with Magnesita to remove sub-par dolostone and limestone for sale as aggregate.

Red pockets of Triassic paleokarst infilled with maroon shale, commonly localized on dedolomitized marble, also constitute waste for Magnesita, but ore for Vulcan Materials (figure 3). Red shale sediment fill drapes to sag in the middle of caves. Triassic cover is also represented by the New Oxford Formation conglomerate, deposited as an alluvial fan ("fanglomerate") with clasts of variably rounded oolitic dolostone, reef limestone, marble, and Triassic shale in a red mud matrix (figure 5). Roughly 45° plunging slickenlines in the New Oxford conglomerate suggested either oblique slip along Triassic faults, or rotation of the fault surface after slickenline formation (figure 6).

Figure 3. Magnesita pit with maroon Triassic karst fill

Figure 4. Dedolomitized metasomatic calcitic marble in the Ledger Formation

Stop 3 – Old Castle Industrial Minerals high-calcium limestone

What began as a surface quarry in 1901 became an underground limestone mine in 1958. Still in operation, the Pennsy Supply mine located in Thomasville, PA produces aggregate and industrial minerals that are used to make caulks and fillers, as well as decorative stone. This mine produces high-calcium (+94%) with a bright white color and composition and

Figure 5. Triassic New Oxford Conglomerate

Figure 6. Oblique slickenlines in New Oxford Conglomerate

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Member Spotlight – Eichelbergers, Inc.
DR24 Dual Rotary Drilling Rig

Casing shoe for the DR24 Dual Roary Drilling Rig

Eichelbergers, Inc. began providing residential wells locally in 1946. With its corporate headquarters in Mechanicsburg PA, Eichelbergers is now known for providing a variety of drilling services throughout the northeastern United States including water supply wells, monitoring wells, extraction wells, geothermal bores, geotechnical rock coring/split spoon sampling and supporting services to the Marcellus and Utica shale plays.

As a continued leader in the drilling industry, Eichelbergers has recently expanded it services with the addition of a new Foremost DR24 dual rotary drilling rig. The dual rotary drilling technology uses conventional drilling tools on a power head, while utilizing a lower drive system to rotate and advance a string of steel casing.

The dual rotary technology has a track record of proven success in challenging overburden drilling conditions. A carbide studded casing shoe is welded to the bottom of the first casing joint to assist the casing in cutting its way through boulders and rock. The DR casing shoes have the same inside diameter as the casing I.D., so there is no reduction in the borehole diameter when switching to open hole drilling.

The inner tool string is prepared to closely match the inside diameter of the casing. During the drilling process, the drilling tools are typically run about 18 inches ahead of the casing string. Since the drilling tools and the casing string are advanced with separate drive units, the drilling tools can be advanced below the final casing string without pulling the tools out of the hole. This is a great advantage over other simultaneous casing advancement systems where it is necessary to trip the tools out of the hole and change the bit and tool string to accommodate drilling below the casing. The lower casing drive can be rotated either clockwise or counter clockwise depending upon geologic conditions and specific requirements of the job. The advancement of the casing while drilling also minimizes the risk of aquifer cross contamination at environmentally sensitive locations.

DR24 Dual Rotary Drilling Rig

The DR24 offers superior control of the drilling spoils and water that is displaced from the bore hole during normal drilling operations. The drill cuttings are diverted through a discharge swivel which is attached to the top of the casing. The drilling spoils are directed through a flexible hose to a container or predetermined dumping location, and/or a cyclone separator. This easy and efficient management of the spoils can often replace the need for an additional person and equipment to move and containerize the cuttings, resulting in a cost reduction to the project.

The rotation of the casing by the lower drive results in a very straight hole. This is valuable in applications for conductor pipes, installing wells screens, foundation piles, and elevator shaft holes. The lower drive also facilitates pulling back casing to expose well screens, or for casing removal.

The advancement of the casing while drilling also reduces risk at the jobsite. While drilling in unstable geologic conditions, the risk of sinkhole development is reduced. While drilling near building foundations or other structures, the risk of impact and damage is minimized during the drilling process. In general, the DR24 offers a great chance for a successful well installation in difficult geology while minimizing the risk to surrounding infrastructure.

For additional information about dual rotary drilling technology, or any of the other drilling services that we have to offer, please visit us on the web at www.eichelbergers.com, contact us by phone at 800-360-0660, or stop by our corporate headquarters in Mechanicsburg, PA.

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extends about 350 feet below land surface. Our tour of the underground mine began as we drove into a large entrance in the side of the surface quarry wall.

High-calcium limestone (figures 7 and 8) mined from this deposit is sold in both powdered and granular form for use in roofing shingles, cat litter, paint, and bagged for use on lawns.

Figure 7. High calcium Kinzers Formation limestone

Figure 8. Fine-grained, high-calcium Kinzers Formation limestone

The Kinzers Formation limestone beds dip to the NE and SW, centered on an anticlinal fold axis. Early surface mining, begun in 1902, targeted the shallow, central nose of the anticline (figure 9), then production went underground in the 1950's to produce from the dipping limbs. Mining has been mostly underground since 1990's, producing roughly 2,500 tons/day.

Figure 9. Original open pit Thomasville mine

Stop 4 – underground limestone mine

Underground mining of the limestone is by the room-and-pillar method. A rectangular network of interconnected rooms 30 ft high on an 80 ft spacing are separated by 35 ft wide pillars of limestone left unmined to serve as roof support (figure 10). Roughly 80% of the limestone bed is removed during mining (i.e., 20% pillars left). The tour visited an exposure on level 2 (350 ft below the surface). Advances were made by blasting 74-hole faces pulling 13 ft per blast on 20 active faces in the mine. The 30-foot high back required special scaling procedures (a 10-pound rock falling 30 feet will ruin your day!). The mine used two methods for scaling: a cutter head scaler resembling a small continuous miner drum to clear the main surface (figure 11), and a Gradall single-tooth scaler for specific problem spots. In addition

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Figure 10. Underground room-and-pillar operation at Thomasville mine

to brilliant white high-grade calcitic limestone exposures, a Triassic breccia infilled with red mudstone along a fault was exposed in one rib (figure 12).

This field trip wrapped up with a group photograph that was taken on the floor of the surface quarry at the Pennsy Supply mine figure 13).

PCPG would like to thank the Magnesita Refractories surface quarry personnel and Pennsy Supply mine personnel who made this field trip possible and safe. It was one of the best field trips in recent memory.

Figure 11. Chatter marks on the 30 ft high back of the Thomasville mine formed by scaling machines

Figure 12. Maroon silt-filled karst along fault exposed in Thomasville underground mine

Figure 13 – Group photograph at the Pennsy Supply mine in Thomasville, PA

PCPG would like to thank Doug Hess, P.G. (Skelly and Loy) for organizing the field trip and ensuring attendees had both a fun day in the field and great food and refreshments at the post-event picnic. And special recognition goes to Bill Kochanov (Senior Geologist, PA Topographic and Geologic Survey) for sharing his expertise and knowledge throughout the day.

PCPG's Government Affairs Committee (GAC) Update

Mark Ioos, P.G., Skelly & Loy

2017-2018 Legislative Session

The members of the House and the Senate began the 2017-2018 legislative session on January 3rd, 2017. Since the start of the 2017-2018 legislative session a total of 62 bills and 3 resolutions of interest have been submitted in the House. A total of 40 bills and 2 resolutions of interest have been submitted in the Senate.

The GAC follows legislative action in both the House and Senate. Bills of interest to geologists are being tracked via an inclusive list included on PCPG's website, under Government Affairs. The list can be viewed via the following link and clicking on "Members-Only content." **PCPG Login for GAC Information**

2017-18 Fiscal Year State Budget Update

The Commonwealth's 2017-18 fiscal year budget was deemed approved by default in mid-July 2017 without the Governor's signature. The $32 Billion budget plan that was approved by the House and the Senate, however, remains under-funded by $2 Billion dollars. In early August the Senate passed a plan to address the $2 Billion deficit by: 1) enacting a severance tax on the production of natural gas from wells tapping the Marcellus shale; 2) expanding gambling; 3) increasing residential/business tax rates on natural gas, electricity, telephone; and 4) borrowing $1.3 billion against Pennsylvania's annual share of the 1998 multistate settlement with tobacco companies.

The Pennsylvania Senate's proposed severance tax (average $0.02/mcf) is expected to raise approximately $100 million in additional revenue. The proposed severance tax will be levied in addition the existing Marcellus Shale impact fee. To make the new severance tax on natural gas production less odious to Pennsylvania's shale drillers, the Senate's tax bill includes the following provisions: "deemed-approvals" for certain permit applications if PADEP does not act within specified time frames as established by the Legislature; and the placement of constraints on the PADEP to prevent the implementation of stricter controls on methane emissions from well sites. Information describing the proposed measures may be accessed here.

In addition, the Senate tax bill directs PADEP to establish a program to deputize permit reviews of all kinds to private contractors. The contractors will be responsible for issuing permits if the PADEP hasn't issued them within 30 days or other established timelines. A permit applicant will be allowed to select its permit reviewer from a list of PADEP-approved contractors. The Senate's proposed funding plan has been forwarded to the House for consideration and debate.

Regulatory/Guidance Update, Chapter 250 Regulations

The Land Recycling Program has begun development of a final omit rulemaking for the Chapter 250 MSC tables. The final omit rulemaking process is used to expedite revisions to rulemakings when minor errors are discovered. The rulemaking will correct errors in three numeric values that were discovered since the latest rulemaking became effective on August 27, 2016. The three numeric values affected are:

- the residential groundwater numeric value for aldrin,
- the residential direct contact numeric value for beryllium,
- the non-residential direct contact for surface soil numeric value for cadmium.

The proposed technical amendments will be presented to the EQB at a future meeting in the third quarter of 2017. In addition to receiving the support of the CSSAB, the Land Recycling Program will send out a mass distribution email to publicize this rulemaking when it is posted on the EQB's website and published in the Pennsylvania Bulletin. A notice of the revision will also be posted on the Land Recycling Program webpage.

EPA Letter Calls on Pennsylvania to Ramp Up Cleanup Efforts for the Chesapeake Bay

In a letter dated April 27, 2017, the U.S. Environmental Protection Agency warned state officials that Pennsylvania needs a realistic plan showing how it will provide enough funding and staff to dramatically ramp up its Bay-related pollution control efforts. Pennsylvania was the only state to get such a warning, and it illustrates mounting concern that if the Keystone state cannot get its nutrient control program on track, it will prevent much of the Chesapeake Bay from attaining its clean water goals. Pennsylvania delivers more nitrogen to the Bay than any other state.

In its letter, the EPA spells out in greater detail what agency officials want to see in the state's next plan:

- local nutrient reduction goals;
- increased efforts to engage local officials; and
- identifying high-priority pollution control actions which are targeted to areas with high amounts runoff.

The letter also said the EPA wanted the state to outline needed policy, legislative and regulatory changes, such as identifying high-priority watersheds for targeted cleanup, and restricting the wintertime application of manure on farm fields. And, critically, the agency wants to see how the state will pay for cleanup actions.

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If the state doesn't show sufficient progress, the EPA letter said that "no later than 2019," the agency will consider taking further actions. Those could include forcing wastewater treatment plants to install costly new nutrient controls beyond what's already required or setting nutrient limits for stormwater discharges and concentrated animal feeding operations. To read the full letter, please see the following link:
April 27, 2017 - EPA's State Specific Phase III WIP Expectations for Pennsylvania

Stormwater Pollutant Reduction Plans New Requirement for Many MS4 Communities

Stormwater Pollutant Reduction Plans (PRP) are a new requirement for 2018 National Pollutant Discharge Elimination System (NPDES) general permits. Any municipal separate storm sewer system (MS4) community that discharges nutrients/sediment to waters in the Chesapeake Bay watershed or to an impaired waterway must submit a PRP with their permit application.

For regulated parties discharging into the Chesapeake Bay, they will create a Chesapeake Bay PRP. This will include a schedule to implement best management practices (BMPs) to reduce nitrogen, phosphorus, and sediment associated with existing stormwater discharges into the Bay watershed. For regulated parties discharging into an impaired waterbody (whether or not it has a Total Maximum Daily Load (TMDL)), they will create an Impaired Waters Plan. Regulated parties may also have to create an MS4 TMDL Plan, where applicable. There are many other requirements for PRPs, outlined by PADEP here. These include calculating the existing pollutant loads for nitrogen, phosphorus, and sediment, and identifying BMPs to install to reduce those pollutant loads.

House Resolution Urging Repeal of MS4 Stormwater Program

Not all regulated parties welcome the new regulatory requirements under the MS4 stormwater program. To address the push-back of the regulated community, the House State Government Committee met on June 7, 2017 to consider HR 284 (Moul-R-Adams). The resolution urges Congress to repeal the U.S. Environmental Protection Agency's MS4 Stormwater Pollution Prevention Program. The House State Government Committee voted to approve HR 284 (vote was mainly along party lines). The resolution was reported as committed on June 7, 2017, laid on the table on July 8, 2017, and removed from the table on July 8, 2017.

In Pennsylvania 775 communities are required to submit MS4 stormwater permits to PADEP, but as many as 200 may get waivers from the requirement. Communities are required to complete local plans by August 3 and submit permit applications to PADEP by

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September 16, 2017. The MS4 Program is also a key component of what Pennsylvania is required to do to meet its obligations under the Chesapeake Bay Watershed Cleanup Program.

In July 2015, EPA notified PADEP its MS4 Stormwater Management was inadequate to meet the Chesapeake Bay nutrient and sediment pollution reduction requirements. In May 2012, EPA did a field review of PADEP's Stormwater Program and found it had insufficient resources to accomplish its task. At least 180 individual communities have already been issued orders by EPA they are not in compliance and must take steps to meet the stormwater requirements.

EQB OKs Proposed Fees to Improve Safe Drinking Water Oversight for Public Comment

On May 17, 2017, the Environmental Quality Board (EQB) unanimously voted to send a proposed $7.5 million Safe Drinking Water fee increase package out for public comment. The fee package is designed to generate revenue for hiring additional staff to meet minimum federal program requirements in PADEP's Safe Drinking Water Program. The proposed package would increase fees for new or amended permits and impose annual fees for community water systems, non-community water systems, and bottled, vended, retail and bulk water suppliers. This is the first increase to permitting fees since the fees were first implemented in 1984. A public comment period will be announced once a draft of the package is finalized.

The U.S. Environmental Protection Agency previously noted that PADEP has one inspector for every 149 public water systems, more than double the national average. EPA has also warned that if inspection requirements are not met, Pennsylvania may lose primacy over Safe Drinking Water programs. At risk is not only federal funding to pay the cost of administering this federal program, but up to $100 million in annual federal funding for grants and loans to improve water systems throughout Pennsylvania.

Based upon the Commonwealth's regulatory review process, the earliest the fees could be finalized is April 2018. Under such an expedited timeline the PADEP could start hiring staff possibly in January 2019. The PADEP proposes to increase the number of inspectors by 50 percent (33 new positions). The inspectors will be used to ensure safe drinking water is delivered from the state's more than 8,500 public water systems. Correspondence and additional information can be found on the PADEP website.

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Proposed Water Use Fees

On May 25, 2017, Representative P. Michael Sturla, serving Lancaster County, submitted **HB 20** (The Pennsylvania Water Resource Act). This is a reintroduction of legislation from the 2015-2016 legislative session that will enact a water resource fee for major water withdrawals in the Commonwealth.

The Pennsylvania Constitution clearly states that public natural resources are owned by the citizens of the Commonwealth. The proposed legislation would include a fee which would allow the Commonwealth to generate revenue from a dedicated, recurring source to fund clean water projects and programs. The PADEP already requires reporting of water withdrawals exceeding an average of 10,000 gallons per day in any 30 day period.

As proposed, for water withdrawn and subsequently returned to the water source, a water resource fee of 1/100th of a cent per gallon ($0.0001) for water withdrawals greater than 10,000 gallons per day would be assessed. For water withdrawn and consumed (not returned to the water source), a water resource fee of 1/10th of one cent per gallon ($0.001) for water consumption greater than 10,000 gallons per day would be assessed. Currently, the Susquehanna River Basin Commission and the Delaware River Basin Commission both collect fees for water withdrawals. Under the proposed legislation these fees would remain in place, but would be deducted from the water resource fee owed by a consumer.

Based on current consumption and usage rates the water resource fee is predicted to generate approximately $250 million annually. The proceeds allocated under the Pennsylvania Water Resource Act would be used to fund water-related projects within the six major watersheds in the state (distributed proportionately based on where the fees are generated). There has been no action by the House regarding **HB 20** (The Pennsylvania Water Resource Act).

Legislation Moving in Harrisburg

On Monday July 10, 2017, the House Appropriations Committee amended Senate Bill 446 (McGarrigle-R-Delaware) in a party-line vote to add the provisions listed below to the Administrative Code:

- **Manganese Standard:** Section 1920-A: Directs the Environmental Quality Board to propose regulations setting a point source water quality criterion for manganese to an upstream area within 5 miles or less of a known potable water supply or known private water supply within 90 days. *(page 57)* [Supported by the Coal Alliance adopting a standard used by West Virginia prohibiting enforcement of a manganese discharge standard unless it was within 5 miles of a water supply.]
- **Recycling Fee Extension:** Section 1937-A: Extends the Act 101 $2 Recycling fee for three years through January 1, 2023 and funds shall not be transferred from the Recycling Fund to the Solid Waste Abatement Fund as required by Act 101. *(page 57)* [No doubt added as a sweetener since the Committee also reported out Senate Bill 646.]
- **Conventional Oil & Gas Wastewater Treatment:** Section 1938-A: Requires water treatment facilities providing water disposal services exclusively to conventional oil and gas wells shall be allowed to operate under existing permits through December 31, 2019. *(page 58)* [Supported by conventional oil & gas drilling industry and applies to three privately-operated conventional wastewater treatment facilities.]

A House Fiscal Note and summary is available. The Committee also reported out Senate Bill 646 (Killion-R-Delaware) extending the $2/ton Recycling Fee until January 1, 2021 without changes. Both bills Senate Bill 446 and Senate Bill 646 now go to the full House for action.

License Renewal for 2017-2019 Biennium

The Good News – For the upcoming 2017-2019 biennium period, the license renewal fees will remain at $50.00. The Pennsylvania Bureau of Occupational Affairs, Engineers, Land Surveyors and Geologists sent out renewal notices via US Mail to registered Engineers, Land Surveyors and Geologists during the week of August 8th, 2017. The delay in getting notices sent out was reportedly related to the Pennsylvania Bureau of Occupational Affairs switching to a new system for licensed professionals to renew their licenses online. As a registered professional you have until **September 30, 2017 to renew your license**. Accordingly, members are urged to look for the renewal notice in your mail. If you have not received a notice, you can go to the website for the Pennsylvania Bureau of Occupational Affairs, Engineers, Land Surveyors and Geologists and renew your license online by clicking here. Click on the link titled "Individuals" along the left side of the webpage. If you have not done so already, you will be asked to set up a username and password.

The Bad News – The Engineers, Land Surveyors and Geologists Licensing Board plans to meet on August 24th, 2017 to discuss a proposed licensing fee increase for the 2019-2021 biennium period. Based upon increased operating expenses, there is a proposal to increase licensing fees to $100.00. This fee increase will not be initiated until the 2019-2021 biennium cycle.

Background - The costs for the state board to operate are to be covered by the biennial registration fees paid by Engineers, Surveyors, and Geologists. Currently, the operating costs for the state board exceed the revenue being garnered by the biennial registration fees (i.e., they are operating in a deficit). Accordingly, the state board has requested an increase from $50 to $100 in the biennial registration fees for Engineers, Surveyors, and Geologists. The proposed increase in the registration fees will be implemented for the 2019-2021 biennium period. Based upon revenue projections, such a fee increase will gradually pay-down the current deficit and cover the board's

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operation expenses through the 2025-2027 biennium period. At that time, the Board will be required to again evaluate the need for a fee increase. If members would like additional information, they are referred to the Regulatory Analysis Form submitted by the Licensing Board to the Independent Regulatory Review Commission (IRRC) on June 14, 2017. Please note that the dates of implementation of the proposed registration fee increase listed in the Regulatory Analysis Form have changed.

PADEP Finalizes Aboveground, Underground Storage Tank Closure Requirements

On July 8, 2017, the Pennsylvania Department of Environmental Protection (PADEP) published notice in the PA Bulletin that final technical guidance is now available on closure requirements for aboveground and underground storage tanks. Effective Date for both guidance documents is July 8, 2017. Information and links concerning the two new guidance documents are presented below.

DEP ID: 263-4200-001. Closure Requirements for **Aboveground** Storage Tank Systems. The purpose of this technical guidance document is to establish minimum standards that must be met to comply with the closure requirements for regulated large, aboveground storage tank systems.

DEP ID: 263-4500-601. Closure Requirements for **Underground** Storage Tank Systems. The purpose of this technical guidance document is to establish minimum standards that must be met to comply with the closure requirements for regulated underground storage tank systems.

Upcoming Events

Save the Date:

March 20, 2018, PCPG Annual Luncheon, Program, Networking (180 mins.) - 11:30 - 6:00, Harrisburg, PA

Don't forget to check the "Courses & Events" calendar on PCPG's home page frequently for up to date information on upcoming educational opportunities.

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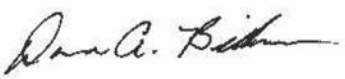
calendars. It might be only one meeting per month, but those meetings are important. Continuing your education, be it from the evening lecture or just having timely, scientific discussions with your colleagues is an important step in continued professional and personal development. Be active in your local societies and in PCPG! That continued activity is key to your continued professional development. If interested in becoming more active in PCPG, including teaching a continuing education course, reach out to a board member or myself (dan@billmangeologic.com) and we'll be happy to bring you into the leadership fold.



Dan Billman
P.C.P.G. President

DEADLINE FOR OUR NEXT NEWSLETTER IS NOVEMBER 24, 2017

For more information, contact our PCPG Newsletter Editor and Communications Committee Chairperson - John Torrence, P.G., by **Email** or telephone at 609-932-7090.

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