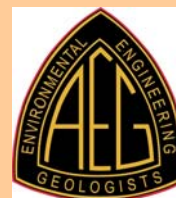




# GEONews



Newsletter of the Association of Environmental & Engineering Geologists and  
American Institute of Professional Geologists, Carolinas Sections

## Summer 2007

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**MARK YOUR CALENDAR!**  
**“LAKE TOWNSEND DAM  
GEOLOGICAL AND GEOTECHNICAL  
CHARACTERIZATION”**

Thursday, October 18, 2007  
Place – Natty Greene’s Greensboro, Contact –  
Rick Kolb, [rkolb@MACTEC.com](mailto:rkolb@MACTEC.com)

Calendar of upcoming events is on our website  
<http://www.AEGCarolinas.org>  
Issue date 21 June 2007

## FALL AEG CAROLINAS OFFICER ELECTIONS

Get out your voting pens, and keep an eye out for the ballots in your mailbox – it’s that time of year again! Please take time to learn about our slate of officers – and mail in your voted ballots as soon as they arrive.

**CHAIR** Rick Kolb, L.G. and current Chair of AEG Carolinas, is Principal Geologist and Project Manager for MACTEC Engineering in their Raleigh office. Rick manages environmental projects for both local and national clients. He received his BS in geology from the University of Montana in Missoula in 1979, and his Master’s in geology from the University of Texas at Austin in 1981.

**VICE-CHAIR** Carin Kromm, P.G., works in the Greensboro office of ECS, and is a Licensed Geologist in North Carolina. Carin is currently the interim Vice Chair of our section. She graduated from the University of Delaware in 1986 with a BS in Geology. Carin is featured in this issue’s column, “About our Members” on page 6.

**TREASURER** Raymond Knox, P.G., is a Project Manager for Schnabel Engineering’s Columbia SC office. He is currently Treasurer of the Carolinas Section of AEG. A graduate of the University of South Carolina with a BS in geology, Raymond has over 30 years of hydrogeologic experience. He is a registered professional geologist in SC, NC, and TN.

(continued on p. 2)

(Elections - continued from p. 1)

**SECRETARY** Richard (Rich) Lovett, PG, is Senior Geologist for MACTEC in Greensboro. Rich currently manages environmental projects for local, regional, and national clients. He received his Bachelor's in geology at the Norwich University Military College of Vermont in 1992.

If you would like to volunteer your time with AEG Carolinas, it is a wonderful opportunity to learn administrative duties, get to know many professionals throughout the Carolinas, and hone your networking skills. Please call, email, or write any of the current slate of officers, who are listed in the green box below. We are currently looking for someone to handle the responsibilities of Membership Chair. What better way to get to know the professionals in your region?

GeoNews is a publication of the Carolinas Section of AEG. There are four issues per year, with deadlines and issue publication dates listed below. We publish news of the profession, job openings, and positions wanted.

Deadlines can be flexible depending on events  
 Spring – deadline March 1, issue date March 21  
 Summer – deadline June 1, issue date June 21  
 Fall – deadline September 1, issue date September 21  
 Winter – deadline December 1, issue date December 21

Deadlines for submittals for the National AEG News:  
 March issue – January 21, 2006  
 June issue – April 30, 2006  
 September issue – July 31, 2006  
 December issue – October 31, 2006

**AEG Carolinas Section – Current Officers and Contacts**

Chair .....Rick Kolb, [Chair@aegcarolinas.org](mailto:Chair@aegcarolinas.org)  
 Vice-Chair .....Carin Kromm [Vicechair@aegcarolinas.org](mailto:Vicechair@aegcarolinas.org)  
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 Secretary .....Richard P. Lovett, [secretary@aegcarolinas.org](mailto:secretary@aegcarolinas.org)  
**Membership Chair ..... WE ARE LOOKING FOR A VOLUNTEER!**  
 Past Section Chair .....Tyler Clark [tyler.clark@ncmail.net](mailto:tyler.clark@ncmail.net)  
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 AEG Carolinas Section Website ..... [www.aegcarolinas.org](http://www.aegcarolinas.org)  
 AEG National Website ..... <http://aegweb.org/indexf.html>

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 ..... [pwinchesterjr@aol.com](mailto:pwinchesterjr@aol.com)

## MESSAGE FROM THE CHAIR

*Rick Kolb, Chair, AEG Carolinas*

Our spring meeting this year was held at NC State's University Club in Raleigh and was held jointly with the Groundwater Professionals of North Carolina and the American Institute of Professional Geologists. I feel it was quite successful, having over 80 attendees (many from GWPNC), including a half dozen students from NCSU. The room in the club was just the right size for us, and the talk by John Moylan, the 2007 Jahns Lecturer, was interesting and informative. I venture to say the keg of beer was successful, too. I was especially encouraged by the attendance of soon-to-graduate students. Mr. Moylan had presented his talk to the Marine, Earth and Atmospheric Sciences department at NCSU on the afternoon of our evening meeting.

Mr. Moylan and I visited with Dr. Fountain, the chairman of the department, and discussed pursuing more interactions between students and practicing geologists. It is part of my on-going effort to reach out to the academic world and let students know of the professional opportunities that are available. I have also been speaking with Drew Coleman, a geology professor at UNC-Chapel Hill, about ways to interact with their department. Though I am not an alumnus of either school, I encourage you to maintain contact with your alma mater, whether in the Carolinas or out of state, and talk to students about life as a geologist. We need to do a better job of getting out the word that jobs are available for geologists.

Our meeting in October will be held at our traditional locale, Natty Green's pub in downtown Greensboro. I have been to several excellent, well-attended meetings there, in a private room upstairs. I encourage your attendance, especially if you've not been to this venue previously. As announced elsewhere in this newsletter, our talk shifts from the environmental arena of the Raleigh meeting to the more traditional AEG talk of geotechnical engineering and design. Jerry Robblee of Schnabel Engineering will talk about the Lake

Townsend Dam in Greensboro, the concrete elements of which began to exhibit cracking less than 15 years after construction. After attempts at repairs, the city retained Schnabel to develop rehabilitation or replacement alternatives, and to design the selected alternative. Jerry will give us the geotechnical and geological background of the dam and dam site, and will describe the wide variety of field techniques used to provide data for the design. It will be an interesting topic, especially for those in the Triad who have been hearing about this dam for years.

Since our last newsletter, Carin Kromm of ECS has volunteered to fill the remainder of Misti Benchabbat's term as vice-chair. Thank you, Carin, for stepping up and volunteering (and joining AEG in the process). As usual, our election will be held and tallied at the October meeting. We are always encouraging new ideas from our members, and serving on the governing board of our section is one way for you to express your ideas. We encourage members to volunteer to serve on the board, or, even if you are not on the board, to attend our regular board meetings held by teleconference. We value the input of all members. If you are interested in serving, please contact any of the board members before the Greensboro meeting.

The annual meeting of AEG will be held in Los Angeles on September 24-29. See the announcement at the back of this bulletin, pages 29 and 30. This meeting marks the 50th anniversary of AEG and is expected to be one of the best meetings ever. There will be a wide range of technical sessions and field trips, though people-watching in Southern California may be more interesting than the geology there. I plan to attend, and hope we can have good representation from our section. Watch the AEG website for details, which are soon to be finalized.

Closer to home on August 1 and 2, our Section is co-sponsoring, with the NC Department of Transportation and the NC Geological Survey, the technical forum "Geohazards in Transportation in the

Appalachian Region". August will be a great time to visit Asheville and escape the summer heat, while learning something that will help you at work. We've secured a great price for a hotel room, and the cost for the forum is nominal as well. We hope you will attend and learn something which will reward all those AEG members who have been working hard to put on this event.

*Rick Kolb*

Chair, AEG Carolinas

[RAKOLB@mactec.com](mailto:RAKOLB@mactec.com)

## **FALL MEETING TO FEATURE GEOLOGICAL AND GEOTECHNICAL CHARACTERIZATION FOR LAKE TOWNSEND DAM**

Keep your calendars open for the AEG Carolinas Fall Meeting on Thursday, October 18, 2007, which will feature Mr. Gerald Robblee, P.E., of Schnabel Engineering. Jerry will describe a review of the site investigation and a summary of the preliminary findings for a geological and geotechnical characterization for potential repairs to be done on the Lake Townsend Dam in Greensboro.

Jerry has extensive experience as a geotechnical Project Manager and Project Engineer. He is an Associate Engineer with Schnabel Engineering in Greensboro, NC and concentrates on geotechnical aspects of infrastructure projects. The meeting will be held at Natty Green's in Greensboro, on October 18. Detailed information, directions, a meeting registration form, contact information, and a map will be published in our Fall GeoNews. So stay tuned!!

## AEG MID-YEAR MEETING

*By Raymond Knox, AEG Carolinas Section Treasurer*

Since this was my first Board meeting, I attended the Board orientation meeting Friday afternoon. The orientation meeting co-leaders were Jennifer Bauer of the Carolinas Section, and Paul Hale of the Allegheny-Ohio Section. Jenn and Paul are co-Chairs of the AEG Governance Committee. During the orientation the key contacts in AEG were identified; the fiduciary responsibilities and liabilities of each Section and Section officer were explained; and the roles of the Board of Directors and the Executive Committee were summarized. In preparation for Saturday's meeting, a brief review of Robert's Rules of Order was completed.

AEG's mission, values, goals, and strategic plan were reviewed. This helped to put all the new Board members on the same page. Becky Roland, AEG's Chief Staff Executive discussed the annual calendar of events and reporting deadlines. Becky explained the significance of the deadlines, and why it was important for each Section to meet the necessary reporting deadlines. Becky also provided basic AEG financial information and tips on how to



Taken from Southside Sanitary Landfill, Indianapolis, IN; the entrance to the Martin Marietta underground mine and the conveyor belts bringing aggregate out of it is in the foreground, the grassed-over landfill wraps around and can be seen in the background.

read financial statements, budget processes, and financial policies and procedures.

Perhaps the most helpful presentation of the orientation meeting was a map of the AEG website. The map highlights the contents of each section of the web site and identifies the location of specific, often needed, documents that can be downloaded.

The Board meeting kicked off bright and early Saturday morning with roll call at 730 AM. Business progressed briskly until adjourning for lunch and an afternoon field trip hosted by Dr. Terry West, AEG President.

Dr. West led a fascinating field trip that was a perfect blend of engineering geology and environmental geology. The Southside Sanitary Landfill encompassed over 250 acres on the White River alluvial floodplain. The site is immediately underlain by 90-100 feet of a complex mixture of glacial sand and gravel outwash and till. A slurry wall keyed into the Albany Shale has been constructed around the landfill. This is one of the landfills Terry discussed in his presentation to the Carolinas Section meeting in Columbia in February.

Methane gas from the landfill is used to heat an adjacent greenhouse operation and adjacent industry. Leachate is piped directly to the municipal treatment facility, also adjacent to the landfill. An added environmental aspect of the site includes a buffer zone with a 9-hole golf course. We were able to observe up close and personal the ongoing construction of an extension to the slurry wall designed to isolate the next expansion of the landfill. The slurry-filled trench is approximately 110 feet deep.

After the landfill tour we loaded up the bus and went next door to the Martin Marietta Limestone Mine. The mine, opened in 1981, is located 160 feet beneath the landfill and is accessed by a 25 per cent grade inclined tunnel that passes through approximately 100 feet of alluvial and glacial unconsolidated material, through 40 to 60 feet of the New Albany Shale and into the North Vernon and Jeffersonville Limestones.



The mine is operated in room and pillar fashion on two levels with a total mine room height of 40 feet. The mine contains all necessary operations (machinery repair, crushing, conveyor systems, etc.) completely underground. Aggregate piles and loading operations are located above ground. We were given the full miner treatment. Everyone received a self-rescue breathing pack, tagged in at the mine entrance, and was loaded up in a crew truck and driven down the shaft into the mine. After an hour of viewing and discussing the mine operations it felt good to be back in the sunshine.

The Board meeting resumed at 7:30 Sunday morning and continued until adjournment at noon. It was encouraging to participate with a group of colleagues from across the country focused not only on the advancement of our profession but also looking to promote participation by students and to provide acknowledgement (scholarships) of worthy efforts in the earth sciences and engineering. I would urge all to become more

actively involved with AEG on some level.

*Raymond Knox is with Schnabel Engineering in Columbia, SC, and is the Treasurer for AEG Carolinas. He may be reached at [rknox@schnabel-eng.com](mailto:rknox@schnabel-eng.com).*



Jennifer Bauer, equipped with her portable respirator (not seen in the photo), in front of the entrance to the Martin Marietta underground limestone mine. The conveyor belt coming out of the mine is in the background.

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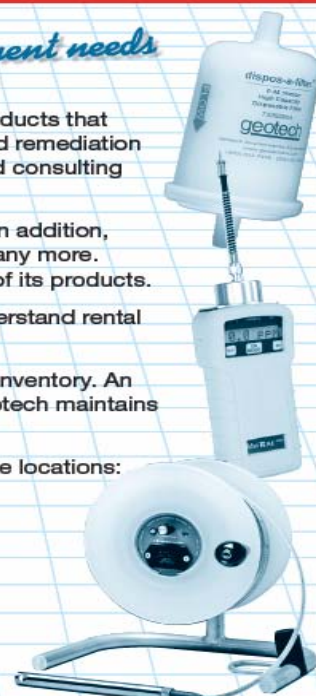
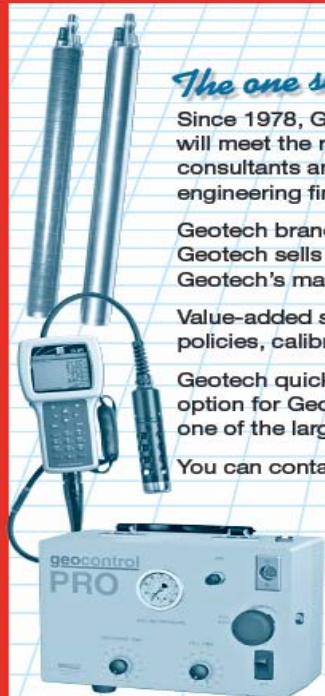
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## AIPG ANNUAL MEETING ABSTRACT DEADLINE IS JULY 30, 2007

This is a reminder that the 2007 AIPG annual meeting is drawing closer. Make sure you sign up early, as space for some events is limited.

Please consider submitting an abstract for a talk or a poster. The deadline for submission of abstracts is July 30, 2007.

The Michigan Section of AIPG is planning to have a drawing for a 42-inch Vizio HDTV flat-panel plasma TV (approximate value \$900). This TV will be used at the registration table to display information about our meeting sponsors and exhibitors. The drawing will be held during the awards reception, and you must be present to win. Tickets for the drawing will be \$2 each, and will be available at the registration table. The winner will be able to take the prize home on Thursday (it will be in use until then).

Information on the meeting can be found on the Michigan Section website at:

<http://mi.aipg.org/2007%20Ann%20Mtg/2007Conference.html>

## ABOUT OUR MEMBERS

*By Rick Kolb, Chair, AEG Carolinas*

*This is a regular column to introduce you to our members, one by one. This second column introduces our AEG Carolinas Vice President, Carin Kromm.*

Carin Kromm works in the Greensboro office of ECS, and is a Licensed Geologist in North Carolina. She graduated from the University of Delaware in 1986 with a B.S. in Geology. She went to the beach to have fun for the summer after graduation and met her future husband, Senior Airman Walter Kromm, who was stationed at Dover Air Force, Delaware.

Within months, she and her future husband moved to Walter's home town (after an honorable discharge, of course) and she worked as a phlebotomist until she found her first "real" job in an environmental laboratory on Long Island, New York.

A wedding (1988), eight years, two states (Florida and Maryland), two environmental consulting firms (Missimer & Associates and Dames & Moore, Inc.), and two children (Kellen and Jared) later, the Kromm family moved to Kernersville, North, Carolina so that Walter could pursue a promotion as an electronics calibration and repair laboratory manager for SIMCO Electronics. His company does calibration and repair of the combustible gas meters for our industry but that is the only instrumentation overlap.

Upon arrival in Greensboro, Carin worked for the Dames & Moore's Charlotte office but hated the commute and found a local position at a two person office for ICF Kaiser (now The Shaw Group) working on several Base Realignment and Closure Act (BRAC)



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military bases. After two years, Carin accepted a position at LAW's Greensboro office in 1998 where she stayed until 2001. In 2000, her daughter Kaiyah was born, Kellen started to play ice hockey, Jared started to play baseball, Walter was promoted to Eastern Regional Manager and started to travel for business, and Carin had a nervous breakdown. (NO, just kidding, the breakdown actually occurred when I turned 40!). From 2001 through 2005, Carin worked part time for Apex Environmental, formerly located in Winston-Salem, in order to try to balance work and a family of five, which, by the way, is impossible. Carin has learned that you can have it all but not at the same time (my therapist told me that).

In 2005, Carin intermittently attempted to be an independent consultant by working for other consultants such as Tetra Tech and Blue Ridge Geological Services, and marketing for R&A Laboratories located in Kernersville. Because of the volatility in finding work, waiting to be paid under the "paid when paid" rule, laundry and dishes, and (I must admit more than once) the call of the pool in the back yard, Carin decided to find a more stable position.


In January 2006, she joined ECS as the Greensboro office's Licensed Geologist. Now, Kellen (age 15) is playing travel hockey for a team in Raleigh (The East Coast Eagles) and is about to get his driver's permit, Jared (age 12) is playing baseball for the Kernersville Little League, Kaiyah (age 6) is beginning her swimming career at the YMCA, and Walter is the Eastern Regional Director of Sales and Operations at SIMCO Electronics.

Carin has been on the board of the Groundwater Professionals of North Carolina since 1998 and was President from 2005-2006. She is filling in for the Vice Chair of AEG Carolinas since Misti Benchabbat relocated with her husband to Atlanta. Carin's hobbies include watching her kids play sports, gardening, reading, tutoring her "ungreen" neighbors on conservation, and enjoying a really good margarita by her pool.



**Scott Pearce**  
Vice President

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**EDUCATION CORNER:****EARTH CACHING – A GREAT WAY TO EXPLORE EARTH SCIENCE***Press Release - AGI*

As summer approaches, many teachers and students look for ways to continue their geoscience research where they can enjoy the weather - outdoors. EarthCaching, which blends recreation and education, offers an exciting, new option. EarthCaching is a variation of geocaching. A geocache organizer posts latitude and longitude coordinates on the Internet to advertise a "cache," a scavenger-hunt destination, which geocachers locate by using GPS devices. Today, 270,000 caches are active in more than 200 countries, according to Geocaching.com. Over one million people participate.

EarthCachers recently have added an educational dimension to the activity. When you visit an EarthCache, you learn something special about Earth science, the geology of the location, or how the Earth's resources and environment are managed there. EarthCaching has been developed by the Geological Society of America - a major Earth Science Week partner - in association with Groundspeak, Inc., and the geocaching community. To learn more about EarthCaching, visit <http://www.earthcache.org/> online.

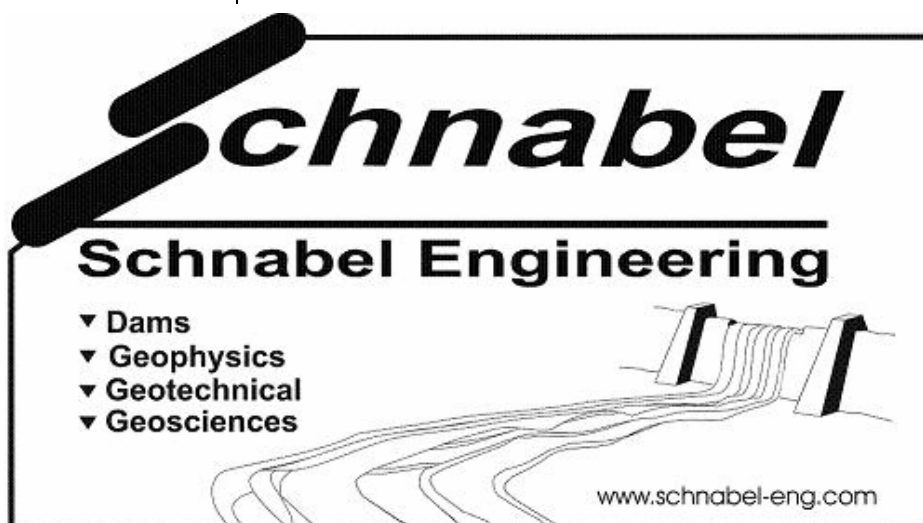
The American Geological Institute is a nonprofit federation of 44 geoscientific and professional associations (including AEG) that represents more than 120,000 geologists, geophysicists, and other earth scientists.

**"FACES OF EARTH" ON THE SCIENCE CHANNEL JULY 23***Press Release - AGI*

Many of you have heard of the effort being made to promote geoscience to the masses. We are about to enjoy one of the biggest contributions to this effort! Set your TIVO or VCR on July 23rd and let everyone know about this exciting event!

Production on the high-definition television series "Faces of Earth" is complete with the first episode of a four part series, "Assembling America," premiering Monday, July 23 at 9 PM (ET/PT) on The Science Channel. We follow along as the scientists use high technology and high adventure to see the world like we have never seen it before, and to understand how humans are both a force of nature and a product of our world. From the formation of the planet to the emergence of life, and the dynamic internal and external processes that have shaped our world and culture, "Faces of Earth" brings Earth to life.  
<http://www.facesofearth.tv>.

For more information, contact Christopher Keane at [keane@agiweb.org](mailto:keane@agiweb.org).



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## GEORAMBLINGS

By Charles W. Welby

For the last several months I have been sorting through my 35-mm slide collection (an anachronism, I suppose) in an attempt to make a systematic collection of slides which record the history and changes in a stretch of beach on the south shore of eastern Long Island over a 20 year period. In the course of the process I found some slides taken in 1988 when my wife and I were on a "camping trip" in Great Britain.

(There was no camping as it rained much of the time we were there, and some of the campgrounds had several inches of water standing in the campsites.)

As always on such trips, we try to have some "geological experiences." That is, bookstores with a supply of geologic publications are early stops, and bookstores in national parks and such are important places too.

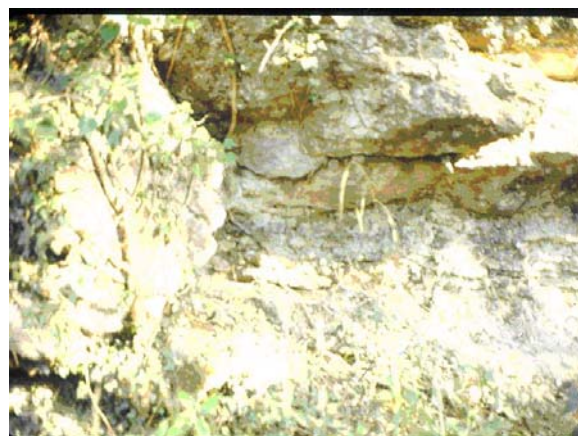


Fig. 1 – Wenlock, patch reef.

During the trip we visited some sites in Yorkshire and examined failing roads where coal mining had caused subsidence. We thought about attempting a visit to a coal mine extending out under the English Channel if we could make connections with a friend who had worked as an engineer in one of the Yorkshire mines. However, claustrophobia set in early at the thought of such an adventure, and the idea

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was not pursued.

One of the joys of visiting Great Britain is to experience some of the historical aspects of the development of the science of Geology. So it was with a measure of anticipation of learning something new that we ventured to Shropshire in the south of England to visit one of the classic sites that helped in the early understanding of the stratigraphy of the Paleozoic. We visited the type location of the Wenlockian Series exposed in the Wenlock Edge, located about seven or eight miles southwest of Much Wenlock. The strata dip to the southeast, and the exposures are

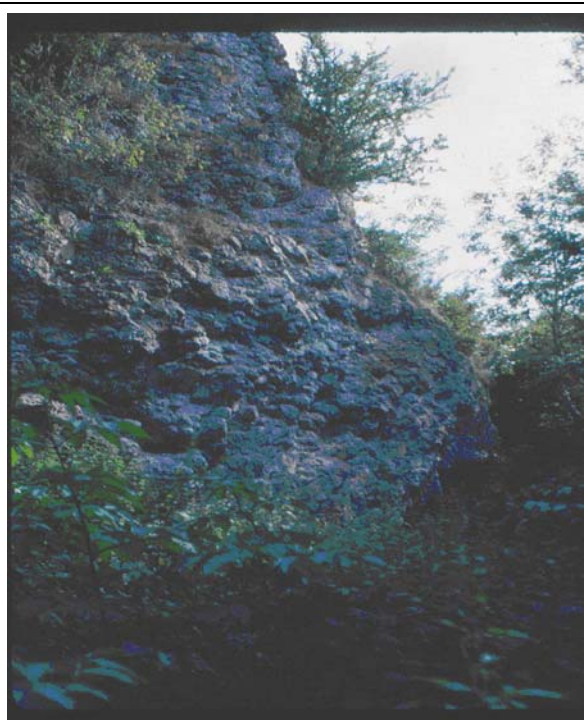


Fig. 2 – Wenlock, large reef.

along the western face of the ridge comprising Wenlock Edge. Ippin Rock marks the beginning of the internationally famous exposures of the shales and overlying limestones of the Wenlock Series. The limestones are the best exposed rocks along the face of Wenlock Edge.

Of special interest to me were the reefal structures within the limestone beds. Some were relatively large structures, standing 10 feet or so in height; others were small “patch” reefs,

and it was possible to see the interbedded nature of the reefal material with the adjacent limestone beds.

As some may remember there was considerable controversy over the establishment of the Silurian Period between the Ordovician Period and the Devonian Period, marked by the “Old Red Sandstone” beds. Murchison and Sedgewick did battle it out. In 1988 the Silurian exposures at Wenlock Edge were involved in a “mini-Cold War.”

After we had walked the exposures along the Wenlock Edge near Ipping Rock (The locality is shown on the Ordinance Survey Map 137), we retired to a local pub for a bit of noontime repast. When we told the proprietor that we had been down along the exposures at Ipping Rock because of their geologic interest, he told a tale about a visit of a field trip associated with the 1988 International Geological Congress. It seems that prior to the Congress a Russian woman geologist had visited the site and spent several days examining every outcrop and developing ideas about the environment of deposition and some of the time relationships of the rocks. She was on the field trip as was an American geologist whose specialty was things Silurian.

So the Russian lady engaged her American counterpart in a lively discussion, and the discussion went on through lunch and up until almost the time that the tour bus was to leave. According the narrator, the Russian lady had deliberately set out to embarrass the American geologist, and the discussion had turned into more than a “simple” evaluation of the evidence and the conclusions that could be drawn from it. It had become somewhat acrimonious. There was a definite “Cold War” edge to it!

*Charles W. Welby*

*Dr. Charles W. Welby is a former section chair for AEG and a regular contributor to this newsletter. He may be reached at [cww\\_ral@hotmail.com](mailto:cww_ral@hotmail.com).*

## AWG 30<sup>TH</sup> ANNIVERSARY CONVENTION, *TRANSITIONS* OCT. 26-27 IN COLORADO

The Association for Women Geoscientists invites you to attend our Thirtieth Anniversary Convention in Glenwood Springs, CO, on October 26 and 27. The Association for Women Geoscientists exists to promote the professional development of its members, to provide geoscience outreach to girls, and to encourage women to become geoscientists. A full program is planned, including speakers on climate change, science and religion, and a field trip to Glenwood Canyon.

The field trip will highlight the general geology of the Glenwood Springs area and specifically the geology of the Glenwood Canyon. Information from the field trip stops will be combined with some examples of the engineering challenges during the construction of I-70 through the Glenwood Canyon.

The famous Hot Springs Pool is there for you to enjoy, too! More information and registration forms are at our website, [www.awg.org](http://www.awg.org).

## GEM AND MINERAL SHOW SCHEDULED FOR SEPT. 7-9

On September 7, 8 and 9, 2007, the Forsyth Gem and Mineral Club will host its 36th Annual Gem, Mineral, Jewelry Show and Sale at the Dixie Classic Fairgrounds Education Building.

Displays provided from private collectors, museums (including the NC Museum of Natural Sciences Treasures of the Earth display), and mining industries located in the state will highlight the show's theme of North Carolina Gold and Minerals. .

There will be presentations daily by the staff of The Reed Gold Mine State Historical Site on North Carolina Gold.

The show offers a great educational opportunity for students and adults of all ages. Organized school groups admitted free. Where else can one pan for gold, watch geodes be cut in half, and see fluorescent minerals? Or shop for jewelry, minerals, fossils, and meteorites at the same time?

For more information, or to volunteer, email Jim Stroud at [StroudJ@VMCMAIL.com](mailto:StroudJ@VMCMAIL.com). The website is <http://www.forsythgemclub.com/>



### Association for Women Geoscientists 30th Anniversary Convention "TRANSITIONS"

Glenwood Springs, Colorado  
October 26 and 27, 2007

Fri: Julie Brigham-Grette and David Chapman on *Climate Change*. Panel discussions on *Balancing a Geoscience Career and Family Obligations*, and *Science and Religion*

Sat: Field trip to *Glenwood Canyon*  
Details and Registration Forms at [www.awg.org](http://www.awg.org)

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## TECHNICAL SECTION

### MIP, OR MEMBRANE INTERFACE PROBE

*By Kelly Bergdoll, President, KB Labs  
(Reprinted by Permission)*

Every year or so, a new buzzword filters out into the environmental community. The newest buzzword, TRIAD, refers to the use of a dynamic sampling plan to expedite a thorough characterization of a contaminated site. This strategy increases the likelihood of a successful remediation, resulting in long term cost savings. A key component of the dynamic sampling approach is the use of real time measurement systems (RTMS) that provide the geologist or engineer with contaminant and/or lithology data almost instantly, and in sufficient quantity to provide a level of sampling density that assures data quality. Real-time, accurate data enable decisions regarding the sampling effort to be implemented onsite, where dynamic decisions are best made.

Foremost in the arsenal of RTMS tools is the membrane interface probe (MIP). Invented by Tom Christy, and patented and developed by Geoprobe systems in the mid 1990's, the MIP is a high resolution screening tool capable of providing both contaminant and soil conductivity data in real time.

"We knew we wanted a down-hole detector," Christy says. "We understood soils, and we understood gas chromatography. So we educated ourselves about membranes. It took roughly two years from concept to deployment of a working probe."

The key component of the probe is a proprietary semi-permeable membrane that acts as an interface between contaminants in the subsurface and gas phase detectors arrayed at the surface. The membrane is seated in a heated block attached to the probe that accelerates diffusion of volatile compounds across the membrane. The contaminants are then swept up

a trunk line and into the detectors, producing a signal at the surface. Detector signal data is acquired continuously, though the practice is to advance the probe in one foot per minute intervals.

The typical detector configuration used by most MIP service providers is a combination of photoionization detectors (PID), flame ionization detectors (FID) and electron capture detectors (ECD). This configuration allows use of the system to detect and group responses for chlorinated solvents, aromatic hydrocarbons (BTEX), and straight chain hydrocarbons such as methane. Detection limits are roughly 100 parts per billion (ppb) for chlorinated compounds if an ECD detector is used, and 1 part per million (ppm) for BTEX compounds. The results are in responses and not concentrations, so the method is semi-quantitative.

The probe is driven into the soil via a standard Geoprobe Direct Push Technology (DPT) rig, and can also be coupled to a CPT unit for an even greater definition of soil stratigraphy, so the depth of deployment is limited by the capability of the DPT rig in the site-specific conditions. The probe is functional in both soil and groundwater. Typical production rates are dependent on the subsurface conditions, but average about 200 to 300 logged feet per day. The output is generally presented onsite via strip log style graphical representation showing all detector responses, including the soil conductivity, speed of penetration and probe temperature. The raw data itself can be imported into various software programs and used to generate 2D and 3D visualizations of the contaminant plume or mass.

What is the benefit of collecting all this data? According to Ed Meyers, Project Geologist with EarthTech, "Using the MIP system during a recent source area characterization investigation allowed us to focus soil sample collection at locations

exhibiting NAPL characteristics, which reduced our time in the field by over 50 percent.”

The MIP system is most often used for point source location. It is an excellent tool for multiple point source sites that might otherwise require a more extensive sampling approach, and offers the site manager enough real time information to effect appropriate changes in the sampling plan on a daily basis.

Besides point source location and plume chasing, there are other ways to use the power of the MIP. For sites with a known point source, such as a typical drycleaning candidate site, the MIP can be used over a one or two day period to vertically delineate the resultant plume. The investigator can then limit the vertical portion of the continuing sampling effort, eliminating unnecessary sampling while continuing to define the horizontal plume using direct push sampling and a mobile laboratory. The MIP can be used to further define and fine-tune a planned injection, and can return for a comparison look at post injection subsurface conditions.

According to Bill Linn, Professional Geologist with the FDEP Hazardous Waste Cleanup Section and Chair of the State Coalition for Remediation of Drycleaners: “The application that the Drycleaning Solvent Cleanup Section sees for the MIP is to provide better definition of the contaminant distribution in the source area, where the predominant portion of the contaminant mass resides. Used in conjunction with other site assessment data, a day or two of MIP work in the contaminant

source area provides valuable data for remedial design, including lithology and relatively high resolution contaminant mass distribution. These data can be used for placement of injection or recovery wells, to select screen or injection intervals and choose locations for additional monitor wells.”

One lesson that has been learned the hard way is one of the driving forces behind the TRIAD approach: an incomplete site characterization will inevitably lead to an unsuccessful remediation. KB Labs had the experience of using an MIP on a site that had been under remediation for some time, but was exhibiting rebounding of TCE in the monitor wells in the injection area. With the MIP, we were able to quickly locate two contaminant sources almost adjacent to the injection wells.

There are limitations to the use of the MIP that need to be kept in mind. The technology is limited to volatile contaminants, and without a separate trapping or customized analytical system, the responses are only seen as total VOCs and not speciated into individual compounds, although there is the ability to distinguish between chlorinated and light petroleum (BTEX) plumes. The MIP also does not provide actual concentrations and the data are expressed as millivolts.

For detailed information regarding MIP, visit the Geoprobe Direct Imaging website: [www.geoprobe-di.com](http://www.geoprobe-di.com). For more on TRIAD, visit [www.epa.gov/tio/triad](http://www.epa.gov/tio/triad)

If you would like more information about MIP applications, contact Todd Romero of KB Labs at [toddr@kbmobilelabs.com](mailto:toddr@kbmobilelabs.com).

*Kelly Bergdoll is President of KB Labs in Gainesville, FL, [www.kbmobilelabs.com](http://www.kbmobilelabs.com). She may be contacted at [info@kbmobilelabs.com](mailto:info@kbmobilelabs.com).*

*Ed: This article was originally published in the Florida Specifier, and is reprinted here with permission. The Fall GeoNews Technical Article will be on Slope Stabilization*

## GEO

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## AGI REQUESTS MATERIAL FOR EARTH SCIENCE WEEK

AGI is currently planning the new Earth Science Week Toolkit. Does your organization have something to contribute? This year, we plan to distribute more than 15,000 Toolkits to K-12 science teachers, university geoscience departments, related corporations and other organizations across the country and around the world.

If your organization would like to contribute materials, please contact Geoff Camphire, AGI Earth Science Week Manager, at [gac@agiweb.org](mailto:gac@agiweb.org) or 703-575-8815.

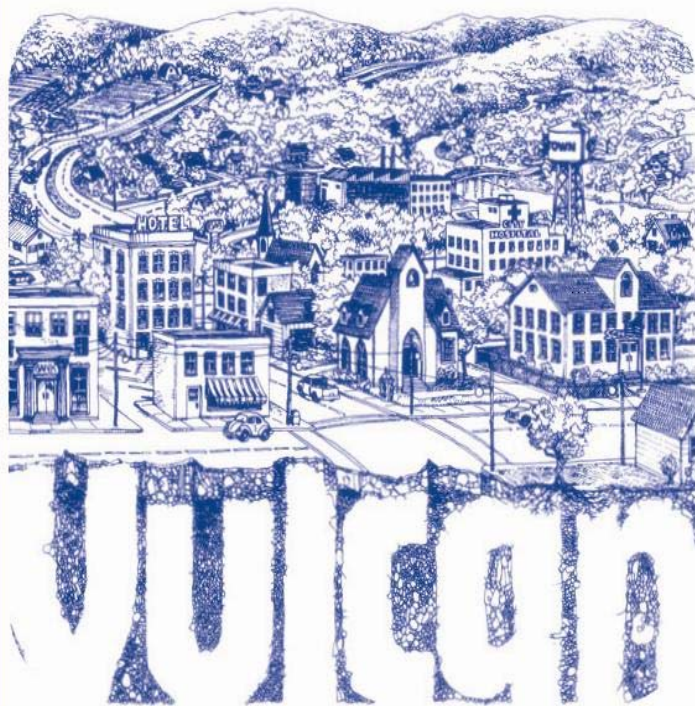
What can we provide to help you do your job? What Earth Science Week materials do you find most useful? Take one minute to fill out the survey at

<http://www.earthsciweek.org/materials/survey.html> and let us know specifically what you found useful in last year's print and electronic resources. By taking the survey, you'll enter to win a free Earth Science Week 2007 Toolkit.

## AEG 50<sup>TH</sup> ANNIVERSARY CELEBRATION – "GOLDEN ANNIVERSARY IN THE GOLDEN STATE"

Be sure to join AEG for our 50th Anniversary Celebration at the AEG-2007 Annual Meeting "*Golden Anniversary in the Golden State*" in Los Angeles, CA, September 24 - 29, 2007. In the plans are a wide selection of technical sessions, events, and field trips, including the Geology of Catalina Island and the San Andreas Fault, Geology of Palos Verdes Peninsula, and the Geology of the Wine Country of Santa Barbara. The flyer and registration forms are reprinted in this newsletter just before the last page. Sponsors for meetings, breaks and events are always welcome. Represent our section by your sponsorship – contact Rick Kolb at [rakolb@MACTEC.com](mailto:rakolb@MACTEC.com) or Jane Gill-Shaler at [janehgill@stanfordalumni.org](mailto:janehgill@stanfordalumni.org).

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## LAND QUALITY SECTION WEBSITE UPDATED

The Land Quality Section (LQS), Division of Land Resources recently updated its web site (<http://www.dlr.enr.state.nc.us/>). Users should refresh their computer cache to ensure that the most current pages are available.

The web site features a site map to facilitate navigation, a full function search capability on the home page, updated contact list (regional offices and central office staff), an expanded 'links' page, and new pages on 'frequently asked questions', consolidated manuals and publications (downloadable pdf and printed manuals), forthcoming events (workshops and training) and links to the state's geodetic and geological surveys. Forms, organized by programs (erosion and sediment control, dams and mining) are consolidated on one page.

Selected highlights for the Land Quality Section program portion of the web site are:

- Erosion and sedimentation control
- Express permitting option & fees
- Plan review flowchart
- Erosion and sedimentation control planning and design manual
- Dams and dam operation, maintenance and inspection manual
- Flow charts for construction, repair or alteration, and removal or breaching a dam.
- Emergency action plan document shells for small, medium and larger dams.
- Mining and updated mining permit application and flowchart
- Lists of active and inactive permitted mines as of 26 February 2007.

Contact the web master, Jeff Reid, at [jeff.reid@ncmail.net](mailto:jeff.reid@ncmail.net) to report broken links



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## ANNOUNCEMENTS

### **CHARLES HINER, P.E. PROMOTED TO SENIOR CONSULTANT**

Charlie Hiner, P.E. with Golder Associates NC, Inc., has accepted his promotion as a Senior Consultant. Hiner joined Golder in 2005 and is a Professional Engineer with more than 19 years of experience in civil engineering services with a broad range of technical, regulatory, management, and consulting experience.

In his new role, Hiner will plan, develop, coordinate and direct a number of large and important projects. He has full technical responsibility for interpreting, organizing, executing, and coordinating assignments. This involves exploration of subject area, definition of scope and selection of problems for investigation, and development of novel concepts and approaches.

### **DAVID "DUSTY" Y. REEDY II, P.G. PROMOTED TO PROJECT HYDROGEOLOGIST**

Dusty Reedy, P.G. with Golder Associates NC, Inc., has accepted his promotion as a Project Hydrogeologist. Reedy joined Golder in 2005 and is a registered Professional Geologist in three states with six years of experience in environmental services, with regulatory, management, and technical consulting experience. He has experience with various environmental regulations and programs, and has managed contracts for local governments and private clients. His technical experience includes geologic/hydrogeologic studies, waste management, site assessments, remediation, and regulatory compliance.

In his new role, Reedy will be responsible for project management and technical assistance for various environmental compliance, remediation and permitting projects.


### **GEOLOGIST JOINS GREENSBORO OFFICE OF GOLDER**

Mr. Kyle Higgs, Geologist, has joined Golder's Greensboro office to participate in fieldwork, data management, and report preparation. He will also assist with task management and environmental team efforts to improve team efficiency, teamwork, and client service. In addition, Higgs will participate in projects such as environmental compliance monitoring, solid waste permitting, environmental site assessments and remediation.

### **VULCAN MATERIALS RATED #1 BY FORTUNE MAGAZINE**

Vulcan Materials Company announced that it is rated the most admired construction materials company on Fortune magazine's newly published 2007 list of America's Most Admired Companies. Vulcan has seven operating divisions with facilities in 21 states, the District of Columbia and an international presence with a quarry near Cancun, Mexico. Its Mideast Division headquarters are located in Winston-Salem, North Carolina with employees and facilities in PA, MD, VA, NC and SC. Vulcan also is ranked among the top 10 companies in the Fortune 1000 for both long-term investment and social responsibility.

Under long-term investment, Vulcan places among Exxon Mobil, Procter & Gamble, FedEx, Berkshire Hathaway and Walt Disney. This year marks the sixth time that Vulcan has been selected to the prestigious Most Admired list, which the magazine calls "the definitive report card on corporate reputations," was



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featured in Fortune's March 19 issue, and at [www.fortune.com](http://www.fortune.com). Vulcan Materials Company, a member of the S&P 500 index, is the nation's foremost producer of construction aggregates and a major producer of other construction materials. For more information about Vulcan, see [www.vulcanmaterials.com](http://www.vulcanmaterials.com)

## JOB OPPORTUNITIES

### **GEOLOGIST / ENVIRONMENTAL SCIENTIST**

GOLDER ASSOCIATES INC., an employee owned consulting firm with branch offices throughout the United States, specializes in environmental sciences, hydrogeology, and engineering.

The Greensboro, NC office has an immediate opening for an entry level professional with B.S. (minimum) in Geology, Environmental Science, or similar earth science. Position involves environmental sampling and reporting; requires travel and fieldwork. Competitive salary and benefits package. Equal Opportunity Employer. Submit your resume to:

GOLDER ASSOCIATES INC.  
4900 Koger Boulevard, Suite 140  
Greensboro, NC 27407  
Attention: R. Kirkman  
Fax: (336) 852-4904  
E:mail: [rkirkman@golder.com](mailto:rkirkman@golder.com)

### **ENVIRONMENTAL EQUIPMENT SPECIALIST / CUSTOMER SERVICE REPRESENTATIVE**

Since 1993 Enviro-Equipment in Charlotte, NC has been a leading supplier of environmental monitoring equipment to engineering and environmental consulting companies, industrial operations, universities, laboratories, and county, state and federal government agencies. We are a distributor for over 30 manufacturers of the latest technology in air, water and soil monitoring and remediation. We have a reputation for providing clean, calibrated and reliable rental

equipment, on time, at reasonable rates with exceptional customer service by experienced environmental professionals.

We have an immediate opening for a Customer Service Rep./ Equipment Specialist. Job duties include cleaning, calibrating, troubleshooting, maintenance and repair of environmental monitoring equipment. Duties also include assisting customers with the rental of equipment or purchase of supplies by providing information regarding application and technical support. Responsible for scheduling rental equipment using inventory database, preparing orders for pickup or delivery and receiving returned equipment.

The ideal candidate will have:

- Excellent verbal and written communication skills and the ability to work independently as well as part of a team.
- Minimum one-year experience as an environmental consultant doing fieldwork or related experience using environmental instruments.
- Working knowledge of Microsoft Office including the use of customer database and inventory programs.
- Bachelors degree in safety or environmental sciences related field, or an equivalent combination of education, training, and experience.
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**STAFF GEOTECHNICAL ENGINEER**

Tierra, Inc., a small and growing engineering consulting firm in Raleigh, North Carolina has an immediate opening for a staff geotechnical engineer. Minimum qualifications include a BSCE or MS in Civil/Geotechnical Engineering, EIT, and proficiency with AutoCAD or MicroStation. Responsibilities include supervising subsurface explorations, geotechnical analysis, engineering drawings, project management, and report preparation. Previous experience in performing subsurface explorations is a plus.

Candidate must be an aggressive self-starter with good technical writing, computer & verbal communication skills. Excellent opportunity for advancement; full benefit package includes health, dental, 401k and bonus plan. Starting pay is commensurate with candidate's qualifications.

Please forward resumes via email to: [glang@tierraeng.com](mailto:glang@tierraeng.com) or via regular mail to: Tierra, Inc., 2736 Rowland Road, Raleigh, NC 27615.

**LABORATORY/ GEOTECHNICAL**

Tierra, Inc., a small and growing engineering consulting firm in Raleigh, North Carolina has an immediate opening for a LABORATORY/GEOTECHNICAL ENGINEERING TECHNICIAN. Minimum qualifications include 2 years experience in performing construction materials and geotechnical laboratory analysis. NICET and ACI certifications. Laboratory responsibilities include performing construction materials and geotechnical laboratory analysis, calibration and maintenance of laboratory equipment, processing and computing data using word and excel spreadsheets. Geotechnical investigation duties will include site reconnaissance; boring layout and utility locate coordination. Previous experience in performing geotechnical subsurface investigations and laboratory

permeability, consolidation and triaxial shear analysis is a plus.

Candidate must be organized, possess good housekeeping skills and have good computer & verbal communication skills. Full benefit package including health, dental, and 401k plan. Starting pay is commensurate with candidate's qualifications. Please forward resumes via email to:

[mrobertson@tierraeng.com](mailto:mrobertson@tierraeng.com) or via regular mail to: Tierra, Inc., 2736 Rowland Road, Raleigh, NC 27615.

**ENTRY LEVEL GEOLOGIST/  
ENVIRONMENTAL SCIENTIST**

CH2M HILL's growing Raleigh-Durham, NC office is seeking an entry level geologist/environmental scientist to assist with environmental site management and munitions response projects for private and government clients. Position requires a BS degree in geology, environmental science, or biological science; Masters degree preferable. The position requires field work and approximately 60% ± travel and 40-Hour HAZWOPER certification is a plus. Field and office tasks will include oversight, sampling, planning, and implementing environmental and munitions response investigations and remediation projects. Resumes may be submitted through the Careers section on our website at [www.ch2m.com](http://www.ch2m.com).

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## AEG ANNOUNCES SUMMER 2007 REVIEW COURSES FOR ASBOG GEOLOGY LICENSING EXAMINATIONS

The Association of Environmental and Engineering Geologists is pleased to announce the Summer 2007 series of review courses for the ASBOG geology licensing exam taught by REG Review, Inc. AEG and REG Review, Inc. have partnered to provide these courses since 1992. In the Summer of 2007, review courses will be offered US-wide in Louisville, KY, Raleigh, NC, Philadelphia, PA, Kansas City, MO, Minneapolis-St Paul, MN, Chicago, IL, Austin, TX, Seattle, WA, and two locations in California (Santa Ana, and Oakland). The California courses have an extra hour devoted to the California Supplemental exam. We have reinstated the CEG and CHG courses in California and these will be held in Oakland and Santa Ana CA each November.

Summer 2007 course dates and locations in Eastern US are as follows, please visit the REG REVIEW website (<http://regreview.com/>) for more locations, and for details:

### Eastern US ASBOG Courses -

2007CEUS-1 Raleigh, NC

DATE - Saturday, July 7, 2007, 8am - 4pm

2007SEUS-2 Philadelphia, PA

DATE - Sunday, July 8, 2007, 8am - 4pm

2007CEUS-1 Manchester, NH (Will hold if there is enough interest)

DATE - TBD, 2007, 8am - 4pm

Courses in California are \$465, all other course locations are \$415. There is a \$15 discount for AEG Members, be sure to ask for it. Books are included in the course prices, flash cards are not.

The pre-registration deadline for the Summer 2007 courses is July 13, 2007 for West Coast courses and **June 14, 2007** for all other courses. (Call anyway – there may be openings)

REG Review, Inc. has been teaching these courses in California since 1985. In March 2000, we began to direct our teaching towards the ASBOG geology licensing exam. The pass rate for students in classes since converting to the ASBOG course has ranged from 85 to 99%. The courses are taught by Patti Sutch, California PG 3949, CEG 1641, and CHG 25, and Lisa Dirth, California PG 3951, CEG 1240, and North Carolina RG by ASBOG exam.

Current information on study manuals, flash cards, and courses may be found online on REG REVIEW, Inc's website at <http://regreview.com/>

To contact REG REVIEW Inc.:

e-mail - [regreview@aol.com](mailto:regreview@aol.com),

mailing address - 37 Rosewell Road,

Bedford, NH 03110,

telephone - East Coast call Lisa Dirth at 603-472-3050, (fax) 603-471-1969.

West Coast (evenings) Patti Sutch at 916-456-4870.

Please pass this information on to any geologist that you know is taking the state licensure examinations and could benefit from a little help in focusing on the most important elements.



Ground Engineering & Environmental Services

336 852 4903 [rachel\\_kirkman@golder.com](mailto:rachel_kirkman@golder.com),  
<http://www.golder.com>

Golder provides ground engineering and environmental services worldwide to various industries, natural resource providers and government.

## AGI OFFERS “OVER THE MOUNTAIN,” A NEW BOOK BY MICHAEL COLLIER

*By John Rasanen, AGI*

The American Geological Institute (AGI) is pleased to offer a new publication from Mikaya Press entitled “Over the Mountain” by Michael Collier, 2006 recipient of AGI’s Outstanding Contribution to Public Understanding of Earth Sciences award.

“Over the Mountain” uses Collier’s aerial photography and geologic background to focus on the beauty and geologic history of America’s mountain ranges. This stunning publication, containing large-format color photographs of the major mountain ranges in the United States, illuminates the geologic processes that created them and is supported with concise text, diagrams and captions, to explain to the reader the geologic story behind the pictures.

Renowned in the field of geoscience, Collier’s books have won the AGI award, the National Outdoor Book Award, the National Park Service Director’s Award and the U.S. Geological Survey’s Communications Award.

To learn more about “Over the Mountain” and other publications offered by AGI, please visit <http://www.agiweb.org/pubs/index.html>.

The American Geological Institute is a nonprofit federation of 44 geoscientific and professional associations that represents more than 120,000 geologists, geophysicists, and other earth scientists.


## GEOHAZARDS IN TRANSPORTATION REMINDER: AUG. 1-2, 2007

This is a reminder that the North Carolina Department of Transportation (DOT) along with the NCGS and AEG will host the annual symposium in Asheville, NC on August 1-2, 2007.

The Coalition is comprised of interested Professionals in transportation or associated with transportation projects.

The Session topics intend to emphasize the economic impacts and the need for increased planning and geological awareness in the built environment. In addition, there is a need to share information related to failures associated with geohazards remediation. Presentations addressing failure forensics will be of particular interest.

For information about presentations or other details please contact: Jody Kuhne, NC DOT, 828-298-3228, [jkuhne@dot.state.nc.us](mailto:jkuhne@dot.state.nc.us)  
Jennifer Bauer, AEG, 828-296-4500, [Jennifer.Bauer@ncmail.net](mailto:Jennifer.Bauer@ncmail.net)  
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## E&EG REQUESTS NEW MANUSCRIPTS

Environmental & Engineering Geoscience (E&EG), a quarterly journal copublished by AEG and GSA, is seeking new manuscripts. E&EG publishes peer-reviewed contributions, based on original work, in the broadly defined areas of environmental and engineering geosciences. Both theoretical and empirical contributions related to these areas are welcome, although preference will be given to papers of an applied nature. Specifically, E&EG encourages the submission of the following kinds of papers.

- Results of original research in the environmental and engineering geosciences.
- Case histories describing the solution of new or unusually difficult problems in the applied geosciences.
- Review papers that summarize the state of the science or professional practice in a branch of the applied geosciences, including contributions describing relevant aspects of local or regional geology or the history of environmental and engineering geosciences.

For more information, contact Abdul Shakoor, [ashakoor@kent.edu](mailto:ashakoor@kent.edu), (330) 672-2968, or Co-Editor Ira Sasowsky, [ids@uakron.edu](mailto:ids@uakron.edu), (330) 972-5389.

## AQUIFER PROTECTION SECTION OF DENR ADOPTS THREE NEW POLICIES

*Press Release from DENR*

In response to the need for consistent evaluation of land based utilization and disposal sites as well as other subsurface investigations, the Aquifer Protection Section has adopted the following policies: Hydrogeologic Investigation and Reporting Policy, Performance and Analysis of Aquifer Slug Tests and Pumping Tests Policy, and Groundwater Modeling Policy all dated May 31, 2007, to be utilized by both consultants preparing applications and Division review staff.

The subject policies reflect changes in the non-discharge rules with the adoption of Subchapter 02T. These policies provide additional details to the requirements in Subchapter 02T. In addition, these policies will assist with the preparation and review of other subsurface investigations needed for reports submitted for Division review.

All permit applications and other site reports shall be reviewed in accordance with the above mentioned policies for any application received on or after August 1, 2007.

The policies may be downloaded at: <http://h2o.enr.state.nc.us/lau/policies.html>.



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## CALENDAR OF EVENTS - 2007

### Geological Events in the Carolinas

Courtesy of AEG Carolinas Section – [www.aegcarolinas.org](http://www.aegcarolinas.org). Posted on the Web at [www.aegcarolinas.org](http://www.aegcarolinas.org)

Send updates/corrections to [rakolb@MACTEC.com](mailto:rakolb@MACTEC.com) Last Updated June 20, 2007

Meeting Date/Time/Location are Subject to Change – Please Verify Prior to the Meeting

| <i>Date</i><br>(TBA = To be announced)  | <i>Event</i>   | <i>Location</i>                                       | <i>Time</i> | <i>Additional Information</i>   | <i>Estimated PDH's</i> |
|---|--|---|-------------|---|------------------------|
| October 18, 2007<br> | AEG dinner meeting, talk by Jerry Robblee, Schnabel Engineering  | Natty Greens, Greensboro, NC                          | 6:00-9:00   | For reservations, contact Rick Kolb (919) 831-8054 or <a href="mailto:rakolb@MACTEC.com">rakolb@MACTEC.com</a><br>The talk is about the geological and geotechnical characterization of Lake Townsend Dam   |                        |
| July 19, 2007<br>    | Monthly meeting (Third Thursday of the month)  | USC Main Campus, 1 <sup>st</sup> floor faculty lounge | 6:30 – 8:30 | South Carolina Association of Environmental Professionals. Karl Rains is their contact person (803) 798-1200. Details at their website: <a href="http://www.geocities.com/scaep">www.geocities.com/scaep</a> .  |                        |
| June 21, 2007<br>   | Quarterly meeting and 9 <sup>th</sup> annual golf tournament, Ground Water Professionals of NC<br><a href="http://www.gwpnc.org">www.gwpnc.org</a> | Days Inn, US 1 at Morganton Road exit, Southern Pines | 6:00-9:00   | Meeting speaker yet to be announced. Friday, June 22 is the 9 <sup>th</sup> Annual GWPNC golf tournament, to be held at Anderson Creek in Spring Lake. Your section chair will vouch that this tournament will be a good time.<br>For reservations, contact Kelly Dillon @ (919) 618-1498 or <a href="mailto:Kelly.dillon@pacelabs.com">Kelly.dillon@pacelabs.com</a>             |                        |
| August 1-2, 2007  | Geohazards in Transportation Symposium   | Asheville, NC   | 1-1/2 days  | Geohazards in Transportation Symposium. A day and a half of technical sessions, and half day field trip. See article page 11 of this issue. Please contact Jennifer Bauer ( <a href="mailto:jennbbauer@gmail.com">jennbbauer@gmail.com</a> ) or Jody Kuhne ( <a href="mailto:jkuhne@dot.state.nc.us">jkuhne@dot.state.nc.us</a> ) for more information, or to submit an abstract. |                        |
| November 9, 10, 11<br>Carolina Geological Society   | 2007 Annual Meeting and Field Trip   | Lee Creek Phosphate Mine                              | TBA         | Carolina Geological Society<br>Buck Ward will lead the field trip<br><a href="http://carolinageologicalsociety.org">http://carolinageologicalsociety.org</a>  |                        |
| <b>Recurring meetings in the region and other information</b>   |  |   |             |   |                        |






## CALENDAR OF EVENTS - 2007

### Geological Events in the Carolinas

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|--|---|--|-------------|---|------------------------|
|   | Water Research Seminar Series and other events                | Various, but generally in Jordan Hall on NCSU Campus     | Varies      | <a href="http://www.ncsu.edu/wrri/events.html#wrriseminars">http://www.ncsu.edu/wrri/events.html#wrriseminars</a><br>Email: <a href="mailto:water_resources@ncsu.edu">water_resources@ncsu.edu</a>  |                        |
| 3rd Thurs. of the Month<br>                     | Forsyth Gem and Mineral Club Monthly Meeting                  | Vulcan Materials, 4401 N. Patterson Ave., Winston-Salem, | 7:30 PM     | <a href="http://www.forsythgemclub.com">Forsyth Gem and Mineral Club</a><br>The Club holds monthly meetings and has an <b>annual gem and mineral show in September. This year it is on Sept. 7, 8, &amp; 9</b><br>Phone: Jim Stroud at (336) 744-2940<br>Email: <a href="mailto:stroudj@vmcmail.com">stroudj@vmcmail.com</a> or<br>Website: <a href="http://www.forsythgemclub.com/">http://www.forsythgemclub.com/</a>                   |                        |
| Generally on the last Thursday of the month<br> | AGS Monthly Meeting   | Atlanta, Fernbank Museum                                 | 6:30 PM     | The <a href="http://www.atlantageologists.org/">Atlanta Geological Society</a> holds monthly meetings, generally on the third Thursday of the month, and quarterly field trips. Stone Mountain, GA field trip on November 4, 2006.<br>President: <a href="mailto:john_costello@mail.dnr.state.ga.us">john_costello@mail.dnr.state.ga.us</a><br>Website: <a href="http://www.atlantageologists.org/">http://www.atlantageologists.org/</a> |                        |
| <br>First Monday of each month except January  | Southern Appalachian Mineral Society Field Trips and Meetings | Murphy-Oakley Community Center, Asheville, NC            | 7:00 PM     | <a href="http://www.main.nc.us/sams/">Southern Appalachian Mineral Society</a><br>Field Trips to limited access and historic collecting sites take place from April to October. Information on the website and from (828) 298-4237.<br>Website: <a href="http://www.main.nc.us/sams/">http://www.main.nc.us/sams/</a>   |                        |
| Various Dates  | Listing of National Geo Events of Various Groups              | Various Locations  |             | Geological Society of America Geoscience Calendar<br><a href="http://www.geosociety.org/calendar/">http://www.geosociety.org/calendar/</a>  |                        |
|   | ASCE GeoInstitute Conferences and Links                       | Your Choice  |             | American Society of Civil Engineers GeoInstitute<br><a href="http://www.geoinstitute.org/events/events.cfm">http://www.geoinstitute.org/events/events.cfm</a>   |                        |





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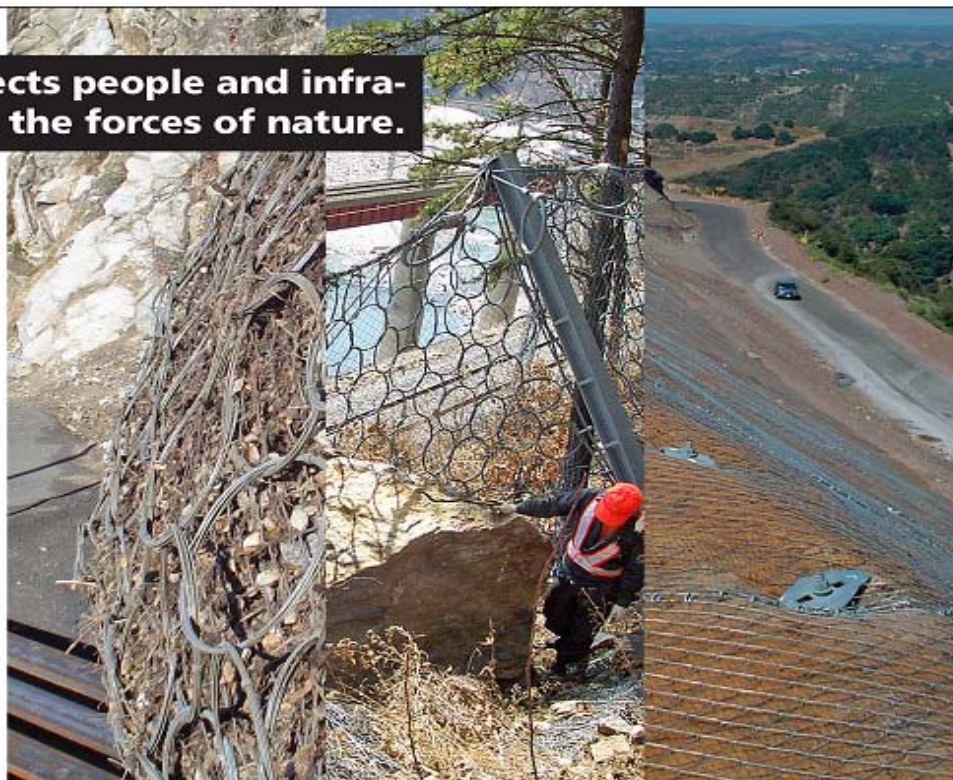
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The Carolinas Section of AEG supports many of its activities with financial assistance provided by our sponsors. Our activities include quarterly meetings, periodic field trips and seminars, a quarterly newsletter, and email announcements about our meetings and geoscience related activities. In addition, we donate educational resources to science teachers.

We offer several levels of sponsorship, but they all have one goal: to keep the sponsor's name in front of our members and to bring you business. We have a real commitment to connecting our sponsors to potential buyers and will do all we can to help you build your business. Most of our members are practicing professionals with responsibility for selecting subcontractors, so our group is a great place to find new customers and to catch up with existing customers in an informal setting.

Our sponsors provide financial support that allows us to have reasonably priced dinner meetings, host seminars, provide discounted dinner meeting costs for students, underwrites the cost of newsletters and our web site, and supports science education in our schools. All costs listed below are per year and begin on the date that your payment is received.

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Email Announcements: Listing of your company name on each AEG Carolinas Section email announcement (our email list is currently over 1,000 people)

Web Page: Acknowledgement on the AEG Carolinas Section Web Page, [www.aegcarolinas.org](http://www.aegcarolinas.org).

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Email Announcements: Listing of your company name on each AEG Carolinas Section email announcement

Web Page: Acknowledgement on the AEG Carolinas Section Web Page, [www.aegcarolinas.org](http://www.aegcarolinas.org).

### Platinum Sponsor (\$500):

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Meetings: Listing on a Sponsor Poster, located at sign in table. Name, contact information and a paragraph about services listed on the back of meeting abstracts handed out at each meeting. Verbal acknowledgement by name in Chairman's introductory comments. Meeting Exhibit: Space for tabletop display at three meetings. Cost of meeting waived for one person on the exhibit date.

Email Announcements: Listing of your company name on each AEG - Carolinas Section email announcement

Web Page: Acknowledgement on the AEG Carolinas Section Web Page, [www.aegcarolinas.org](http://www.aegcarolinas.org).

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Businesses or individuals can also advertise in GeoNews without being a full sponsor. The annual rates for advertising only in GeoNews are:

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Please complete the form below and mail to Jane Gill-Shaler, AEG Carolinas Newsletter Editor. Please call if you have any questions (contact information below).

### AEG Carolinas Section Sponsorship Form

Please begin our sponsorship of the Carolina Section of the Association of Engineering Geologists. Our level of sponsorship is:

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- Site Characterization
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- Ethics
- Professional Practice
- Subsidence
- Tunneling

#### Abstract submittals due April 1, 2007

E-mail preferred: [aegjules@aol.com](mailto:aegjules@aol.com)  
or submit your abstract on AEG's Web Page:  
[www.aegweb.org](http://www.aegweb.org)

## AEG•2007



ASSOCIATION OF ENVIRONMENTAL &  
ENGINEERING GEOLOGISTS

### **GOLDEN ANNIVERSARY IN THE GOLDEN STATE**

#### 50<sup>th</sup> ANNUAL MEETING

Los Angeles, California  
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September 24 – 29, 2007

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- Environmental Issues
- Coastal/Floodplain Processes
- Construction Geology
- Field Geology
- Dams
- Forensic Geology
- Professional Practice
- Geomorphology
- Geophysics
- Geotechnics
- Landslides/Slope Stability, Subsidence
- Natural Hazards
- Remote Sensing/GIS
- Rock Mechanics
- Seismic Hazards
- Seismology
- Site Characterization, Soil Mechanics
- Ethics
- Tunneling

#### ◆ **Symposia**

- Paleoseismology and Active Faulting
- Perspectives on Regulatory Review
- The Future of Environmental and Engineering Geology – A Global Perspective
- Engineering Challenges of Mine Reclamation
- Levees Protecting Urban Population Centers: Are New Standards Needed?
- Tunneling
- Solving Diverse Problems with Groundwater Models
- Advances in Subsurface Characterization Techniques and Environmental Investigations
- Dam Removal and Decommissioning
- Operating Dam Analysis and Remediation
- Draped Rockfall Protection Systems

#### ◆ **Field Trips**

- Geology of Catalina Island
- The Birth of Engineering Geology
- Coastal Geology and Landslides of Orange County
- Geology of the San Andreas Fault
- Rockfall and Debris Flow Protection Along Highways
- Engineering Geology and the Construction of the Arrowhead Tunnels
- Geology of Palos Verdes Peninsula
- Geology of the Wine Country of Santa Barbara

#### ◆ **Teachers' Workshop**

The Teachers' Workshop will be held on Saturday, September 29, 2007 at the Sheraton Universal.

#### ◆ **Short Courses**

- Estimation of Soil Properties for Foundation Design
- Estimation of Rock Properties for Foundation Design
- Implementation of Special Publication SP 117: Guidelines for Analyzing and Mitigating Liquefaction and Landslides
- Open Seismic Hazard Analysis: Web-Based Research and Applied Tools for SHA
- Digital Terrain Analysis
- Virtual Mapping

#### ◆ **Program with Abstracts**

Non-members, if you would like to receive a copy of the *AEG•2007 Program with Abstracts*, contact Julie Keaton at 951-789-0271. Everyone is invited to submit an abstract to one of the Technical Program titles. Contact Julie Keaton at [aegjuliek@aol.com](mailto:aegjuliek@aol.com). **NOTE:** Program and schedule are subject to change. You may also view all the *Program with Abstracts* information on AEG's web site: [www.aegweb.org](http://www.aegweb.org)

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