



American Institute of Professional Geologists Michigan Section

August, 2008

From the President's Desk

As an update to our efforts with the AIPG-MI Endowment, we have created a case statement which specifies how the money will be invested, who will benefit from the money, and the duties of the administrator who will oversee the account. The purpose of the Endowment will be to fund educational awards and student scholarships. It is our hope that the first scholarships will be awarded at the December meeting.

Secondly, the White Paper on the PG Bill is now in draft form and has been presented to the Michigan Section's legislative committee, chaired by Walter Bolt, C.P.G. The purpose of the White Paper is to formally state the purpose of the PG Bill, bring attention and awareness to the need for the PG Bill, and ultimately help the PG Bill become law. As you know, making a law in Michigan can be difficult because it requires a passing vote on the Bill by the State Legislature, and then agreement by the Governor. Our bill thus far has not made it out of the committee handling the bill. The White Paper, which describes why we think it would be a good law for Michigan, can be presented to the committee and to other legislators and the Governor; therefore, we feel it is important that the White Paper accurately describe the benefits of the PG Bill.

As we continue highlighting Michigan geology, we now turn to Michigan's Upper Peninsula and the important role it plays in our economy. As an example, in 2002, geologists discovered a nickel and copper deposit located in Marquette County in Michigan's Upper Peninsula. A sulfide mine is planned at this location to extract the nickel and copper. The mine has been opposed by certain groups because of its potential harmful effects on the environment. Although mining was once common in the Upper Peninsula, it has traditionally been ore-based mining of silicate, carbonate, sedimentary rocks or "native" metals (such as native copper). Sulfide mining extracts nickel, copper and other deposits from sulfide-rich rock minerals, exposing it to water and oxygen and producing acid. The fear is

that the acid will ultimately leach into rivers and streams, contaminate drinking water, and threaten animal and plant species. Mining companies intend to be responsible, sustainable, and economically viable, while environmental groups and local community members are working to oppose it on the basis of potential environmental destruction, wildlife devastation, and economic downfall. The potential for additional jobs in the suffering state of Michigan's economy, the increase in demand for nickel and copper in the global market place (which drives up price), also helps promote approval for such mining in the UP. So who do you believe and which side are you on? Ultimately, we need to educate ourselves and the public to make the best decisions. You will hear more discussion like this and have the chance to meet other geologists working in your field of expertise at our upcoming meeting in Lansing, October 16, 2008. See you all there.

Timothy B. Woodburne, CPG
AIPG Michigan Section President

Section Meeting on October 16th

The Michigan Section is please to announce that Dr. Ted Bornhorst (Director of the A.E. Seaman Mineral Museum in Houghton, Michigan) will discuss "Nonferrous Metallic Mineral Potential of Michigan's Western Upper Peninsula in Context of Government Regulations" at the October 16, 2008 Section meeting. The meeting will be held at the Holiday Inn South hotel and conference center in Lansing, Michigan.

Educational Advancement Award Information

How many of you know that the Michigan Section has an awards program and provides grants to educational applicants each year? Did you know that over the past several years the Section has provided Grants to a variety of applicants that ranged from \$500 to \$1,000 each? For those members that attend the annual Section meeting in December, they have had the pleasure of witnessing the

distribution of both the awards for our membership, as well as the grants to much deserving recipients.

As the Chairman of the Awards Committee, it is my pleasure each year to coordinate both the awards and education grant programs. I would like to take this opportunity to remind the membership that they can help make both of these programs an ongoing success. The various awards available include: Longevity, Outstanding Contribution to the Section and Geologist of the Year. The longevity award is easy to get, as you just have to put up with the rest of us, year after year and keep paying your dues. The remaining awards (Geologist of the Year and Contribution to the Section) are awarded based on a nomination and voting process by the Awards Committee. This is where each of you can contribute by nominating a member or a non-member for an award. The nomination forms are available online or an email will suffice. Please submit your nominations no later than November 3, 2008 for consideration for presentation at the December Section meeting.

The educational grants are a great opportunity to help your local school or organization that is involved in an earth science raise additional funds for a specific project. So spread the word that these grants are available for deserving groups and remember that the kids involved in these types of programs are the future membership of this and/or other AIPG Sections.

Jason Lagowski, CPG – 2008 Michigan Section Treasurer and Awards Chairman

Change in Newsletter Delivery Policy

Just a reminder...

Over the past several years, the Michigan Section

newsletter and meeting announcements have been delivered to members, nonmembers, and students alike either by email or regular mail. At its February 20, 2008 meeting, the Section executive committee adopted a new policy regarding delivery of the newsletter to help minimize expenses related to postal delivery.

Beginning with the first newsletter issue in 2009, delivery will be by email. For those individuals that cannot or will not receive the newsletter electronically, a hard copy can be mailed; however, a \$15 yearly subscription (paid in advance) will be required. The subscription will be paid directly to the Michigan Section, and will be in addition to regular annual dues. For the remainder of 2008, the newsletter will continue to be delivered by either regular mail or email notice.

Please be sure that your contact information remains up to date, particularly your email address. Send your contact information to Adam Heft, who is maintaining the Michigan Section database.

If anyone has any questions regarding the newsletter delivery, please contact either Tim Woodburne or Adam Heft.

Michigan Section Membership Challenge

The following membership challenge was submitted by Larry Austin just prior to the first 2008 Section meeting in an effort to encourage our student members to attend. The challenge has been continued for the October Section meeting. Please consider pledging your support by either offering to buy a student dinner or to transport them to the meeting.

I have an offer for one of the student members. I'll

AIPG Michigan Section Officers Scott Cesarz, Past-President, 517-347-3404, (scott.cesarz@ch2m.com); Tim Woodburne, President, 616-364-8491 (twoodburne@preinnewhof.com), Sara Pearson, Vice President, 616-356-0253, (pearsons@michigan.gov); Jason Lagowski, Treasurer, 248-994-2243 (jason.lagowski@arcadis-us.com), Don Conway, Secretary, 231-933-5132, (dgconway@goslingczubak.com).

Newsletter Editors Adam W. Heft, 517-887-1100 (hefta@fitzhenne.com) and Tyrone J. Black, 989-705-3402 (blackt@Michigan.gov).

Committees Awards, Jason Lagowski (jason.lagowski@arcadis-us.com); Educational Outreach, Adam Heft (hefta@fitzhenne.com); Membership and Student Chapters, Walter J. Bolt (wbolt@manksmithgroup.com); Registration, Scott Cesarz (scott.cesarz@ch2m.com); Screening, Kevin Lund (klund@g-eri.com); 888-417-4440; Student Chapters, Eric Wallis (Ewallis@WM.com); Quarterly Meetings, Scott A. Cesarz, (scott.cesarz@ch2m.com); Treasury, Bruce Beltman (bbeltman@gwsi.biz).

Circulation of the Michigan Section Newsletter is to over 330 members, a number of prospective members, several geology departments, and companies for a total over 500. Distribution is by USPS and e-mail notice of web posting. Copy in PDF format is posted at <http://www.mi.aipg.org>.

Newsletter Sponsors and Advertisements: The Sponsor section is \$15 per name or column inch for copy ready art. Copy preparation at an additional charge is available.

Professional Postings: The Professional Posting section, where you may advertise positions, is \$10 per column inch.

Seeking Employment: Members seeking employment may submit a 50-word listing at no charge.

Articles: The newsletter will feature topics on a quarterly basis, and will have a quarterly deadline for submissions. If you have ideas for topics or articles, query us or submit it!

Authors' opinions in articles are not necessarily the opinions of the Michigan Section or National Headquarters of the AIPG.

buy dinner at the next AIPG Section meeting and provide transportation for one major if they are willing to attend the meeting. I hope other members will take up the gauntlet and help cover costs as well.

By way of providing this information to Adam, whom I hope will distribute it to everyone in the section, I'm also:

1. Issuing a challenge to other AIPG members to do the same.
2. Offering to provide transportation from my office to the meeting for up to five additional students if other members will pick up the cost of their meal.
3. In the unlikely absence of sufficient students to fill my Durango, offering to share the ride with other members in the Grand Rapids area.

For interested students, please submit your willingness to attend the meeting and accept one of the paid dinners to Adam Heft no later than October 10, 2008 so that reservations can be made. Paid student dinners will be available on a limited, first come, first served basis. Members that are willing to pay for a student to attend the meeting should also notify Adam as soon as possible so we will know how many students will have their costs and/or transportation covered and can confirm with the student(s).

Lawrence M. (Larry) Austin, CPG, CP

Michigan Section Field Trip Summary

On August 8 and 9, 2008, nearly 50 Michigan Section members and their families attended a two-day field trip in northeast Lower Michigan. The field trip kicked off at 10 am on Friday morning at the LaFarge Stoneport Quarry. Quarry Engineer Allan Idalski met the trip participants and led the busses into the quarry where quarry personnel were ready to blast a section of a bench in the actively mined area.



Just after blasting occurred at Stoneport Quarry

Following the blasting, Allan gave an overview of quarry operations, providing an opportunity to view portions of the quarry. Participants then had the chance to search "waste piles" for various fossils. The Stoneport Quarry workings extend through the middle Devonian Dundee Limestone, Bell Shale, and Rockport Limestone.



Participants searching for fossils at Stoneport Quarry

After fossil collecting in the quarry, the trip participants broke for lunch, and then met in the early afternoon at the Thunder Bay National Marine Sanctuary in Alpena. There, the group was given a tour of the facility with explanations of the area the sanctuary covers and the number and age of various shipwrecks found within the sanctuary boundaries.



One of the large quarry trucks dumping rock into the crusher

Saturday morning saw the trip participants assemble at the Rockport Quarry north of Alpena. MDEQ geologist Jeff Spruit gave a short presentation on the history of the quarry, its role in the construction of the Mackinac Bridge, and the fossils that could be found before everyone headed into the quarry. In spite of a torrential downpour, everyone had a good time. And yes, Larry Austin recovered nicely from his trip-and-fall incident.



Participants at Rockport Quarry before collecting



Field trip participants Seraphine and Emma Heft and their two-day haul of horn corals, brachiopods, bryozoans, and Hexagonaria corals from the Stoneport and Rockport quarries.

Selected photographs from the field trip are in this newsletter. Additional photographs and video clips of the Stoneport Quarry blasting will be posted on the Michigan Section website. Look for them under "2008 Field Trip Photographs."

Adam W. Heft, CPG, Michigan Section Editor

4th Annual Golf Outing

The 2008 AIPG Michigan Section Spring/Summer Golf Outing was held on May 20, 2008 at Lyon Oaks Golf Course in Wixom, Michigan. The Michigan Section would like to say a big thanks to the 62 golfers participating in the Fourth Annual Golf outing. The Michigan Section would also like to thank many business and individuals who helped make the event a success. Our hole-in-one sponsor was Ameriprise, sponsoring four holes including a \$10,000 hole-in-one contest. Our \$2,500 putting contest sponsor was Layne Northern. Our tee sponsors included EDR Environmental Data Resources, West Michigan

Drilling, GEO-environmental Resources, Waste Management, Mateco Drilling Company, EQ, Pace Analytical, GEOTRANS, Trimatrix Laboratories, Boart Longyear, Terra Contracting, Stantec\Secor, Civil Engineers and Consultants and Fibertec Environmental Services. Door prizes and goodie bags were supported by Ameriprise and the Michigan Section. The dinner was sponsored by Waste Management. Special thanks to Bob Reichenbach, Pat Bartnik, and administrative support from GEOTRANS. Make plans to attend next year's golf event in May 2009 at Lyon Oaks.

Kevin Lund, CPG, 2008 Golf Outing Committee Chairman

Support our Sponsors!

The Section Executive Committee would like to remind its members to support the companies that are advertisers in the newsletter. Consider working with these companies, and when you speak with their representatives, let them know that you saw their ad in the Michigan Section newsletter.

Perspectives on Contaminant and Free Product Trend Tracking

Tracking contaminant trends is important in evaluating fate and transport of compounds in the environment. Most often we look for decreasing concentrations of the contaminants based upon laboratory analytical results. If the laboratory analytical results indicate that the contaminants are decreasing in groundwater sampled from a well, then the site must be "cleaning up." Right? No, not necessarily. There are times when trends in concentrations appear to be decreasing over time and then a sudden spike in the levels occurs. What has happened? Another release? Possibly, but what if this is not the case?

As we all know, the hydrogeology and hydrogeochemistry can be very complicated at sites requiring an evaluation of several factors that influence contaminant migration and degradation. Fluctuating water tables, which not only tend to be cyclical with seasonal changes, also tend to have cycles that may last for years during long-term periods of lower or higher than average precipitation. Preferential pathways, both naturally occurring and anthropogenic, often influence the movement of contaminants. Commingling of plumes with different contaminants often influences migration and affects degradation rates of some compounds. Sampling procedures may also influence trends in contaminant levels. These are just a few examples of factors that may influence the trend in contaminant concentrations and distribution and should be considered when evaluating analytical results.

Despite the known influence of the factors listed above plus many others that may be site-specific, the Michigan Department of Environmental Quality (MDEQ) routinely reviews sites that rely only upon decreasing contaminant trends in analytical results to demonstrate that natural attenuation is occurring or bioenhancement is effective or other in-situ remedies are working. These remedies are not simple physical measures for corrective action where decreasing contaminant concentrations are the means for demonstrating that the compounds of concern have been physically removed by excavation or extraction. In-situ remedies rely upon and are affected by the complex nature of the biological lifecycle of bacteria, complex geological settings, unpredictable precipitation cycles, and other influential factors that affect the results of laboratory analyses. Therefore, simply referring to analytical results for such remedies is least likely to result in an accurate interpretation of site conditions.

For example, seasonal and long-term water table fluctuations have been demonstrated to affect contaminant concentrations. Analytical results from monitor wells located downgradient of a source often exhibit an inverse relationship when compared to water level elevations. For example, water levels are often higher in the spring due to snow melt and increased precipitation, which can dilute the contaminant levels, resulting in an apparent "decrease." When water levels fall throughout the summer months and into the fall, a spike in contaminant concentrations often occurs. The rise and fall of the water table creates a "smear zone" that must also be considered when selecting an appropriate remedy and monitoring the effectiveness of the corrective action. An effective comparison of this data is often simply done with a hydrograph showing contaminant concentrations plotted on the same graph with water elevations over time.

This same example holds true for sites where measurable quantities of free product are present. Hydrographs depicting the thickness of the free product in a well versus the water table elevation of a well outside the area of free product over time is a very effective method for predicting when free product will accumulate in wells and to demonstrate that corrective actions taken have removed the free product, when appropriate. Success is measured by decreases in contaminant concentrations or measurable quantities of free product despite fluctuations in the water table.

In addition to the preparation of hydrographs, there are other methods that can be used to demonstrate the effectiveness of corrective actions or prove that natural degradation is occurring and many will be site specific, which the MDEQ is open to reviewing.

Sara Pearson, CPG, Michigan Section Vice President with Patty Brandt, MDEQ RRD Part 201 Specialist

Newsletter Notice via E-mail

Save us costs and more quickly receive meeting announcements and newsletters. Submit an updated e-mail address to Adam Heft at hefta@fitzhenne.com. If you move or change places of employment, don't forget to send your new contact information to both the Section and to National.

Coming Events

September 20-24, 2008: 45th AIPG Annual Meeting, held in conjunction with the 3rd International Professional Geology Conference. The meeting will be held in Flagstaff, Arizona. Details can be found in issues of TPG and on National's website at www.aipg.org.

September 2008: Michigan Basin field trip to Copper Country, Houghton, MI. This four-day trip will include mine tours, rock collecting, a mineral museum tour and evening lectures. Trip leaders and lecturers will include Bill Haller, Dr. Bill Rose, MTU, and Dr. Larry Lankton, MTU.

October 16, 2008: AIPG Section Meeting: "Nonferrous Metallic Mineral Potential of Michigan's Western Upper Peninsula in Context of Government Regulations " by Ted Bornhorst, Ph.D., Director of the A.E. Seaman Mineral Museum.

Location: The Holiday Inn South Hotel and Conference Center, Lansing, Michigan.

Dinner: Choose from: Plymouth Chicken (chicken breast stuffed with cranberry cornbread dressing and orange cranberry glaze), Salmon Florentine (baked salmon with spinach and mushroom presented with cucumber relish), or Roast Strip Loin (whole roasted strip loin sliced English style with a Cabernet Sauvignon mushroom sauce). All entrees served with garden salad, red skin potatoes, green beans almandine, warm rolls and butter, coffee, tea, milk or iced tea, and fruit pies.

Schedule: Cash Bar/Check-in 5:30 to 6:30 PM, Dinner: 6:30 Speaker: 7:30 to 9:00. Prize Raffle.

Cost: Students \$25.00, Members \$35.00, Non-members \$40.00.

RSVP by October 10, 2008: RSVP to Don Conway at dgconway@goslingczubak.com. Notice by e-mail is preferred, and please include AIPG in the subject line. Don can also be reached at (231) 933-5132. Reservations not cancelled by October 14th will be billed. Checks to AIPG-Michigan.

Students attending the meeting and looking for full-time employment after graduation or a part-time summer position can bring several copies of their résumé. Leave one résumé at the sign-in desk upon arrival. Résumés obtained at the meeting are available to AIPG members seeking job candidates by contacting Kevin Lund, klund@g-eri.com.

September 26-28, 2010: AAPG Eastern Section Meeting, sponsored by the Michigan Basin Geological Society and the Michigan Geological Repository for Research

and Education. The meeting committee is in need of volunteers to chair committees and to assist on committees. Anyone interested in participating in a committee should contact Robb Gillespie for information via email at robb.gillespie@wmich.edu.

December 4, 2008: AIPG Annual Section Meeting:

Details forthcoming, meeting to be held in the Ann Arbor area.

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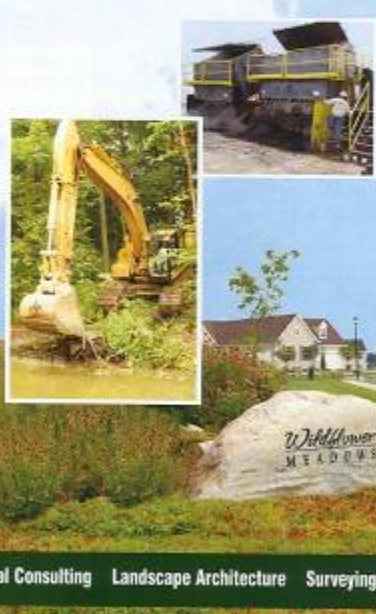
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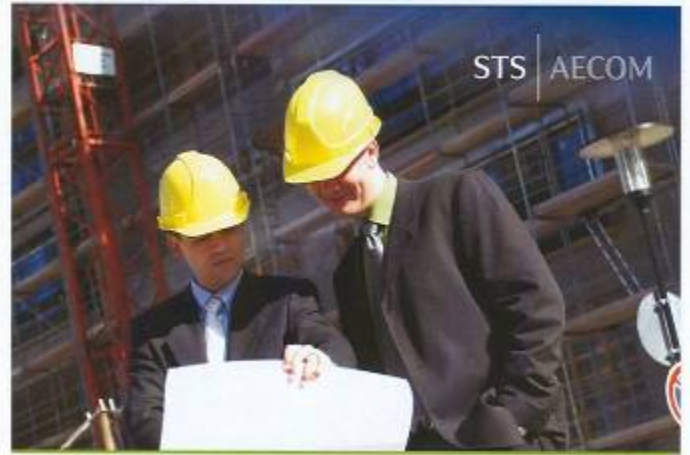
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Project: AIPG Annual Meeting
 Location: Traverse City, Michigan
 Date: October 7-11, 2007

Depth	Legend	Services Description	Positive Problem Solving	Cost Effective	Successful	92%
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3		Real Estate and Business Transactions	Max	+++	95	100
4		Governmental Relations	Max	+++	95	100
5		Toxic Torts	Max	+++	95	100
6		Insurance Coverage Claims	Max	+++	95	100
7		Environmental Remediation	Max	+++	95	100

Whatever level of needs your company has, the experienced attorneys of Fraser Trebilcock Davis & Dunlap, P.C. can assist you.

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**Michigan Chapter
American Institute of Professional Geologists
MEETING ANNOUNCEMENT**

October 16, 2008

**NONFERROUS METALLIC MINERAL POTENTIAL OF
MICHIGAN'S WESTERN UPPER PENINSULA IN CONTEXT OF
GOVERNMENT REGULATIONS**

Featured Speaker: **Dr. Ted Bornhorst**

Director of the A.E. Seaman Mineral Museum, Houghton, Michigan

Location: Holiday Inn South Hotel & Conference Center Lansing, MI (Maps attached)

Cost: Students \$25.00, Members \$35.00, Non-members \$40.00 **Registration is payable at the door by cash or check; however, prepayment is preferred and speeds up the check-in process at the door. Please note: Cancellations made within 24 hours of the meeting and/or "No Shows" will be charged and expected to pay the registration fee.**

Dinner: **Choice of Plymouth Chicken, Salmon Florentine, or Roast Strip Loin.** All entrees served with garden salad, red skin potatoes, green beans almandine, warm rolls and butter, and fruit pies.

Time: Cash Bar 5:30-6:30 PM, Dinner 6:30 PM, and Speaker 7:30-9:00 PM

RSVP: Don Conway, at dgconway@goslingczubak.com (preferred - put AIPG in the subject line) or (231) 946-9191 no later than October 10, 2008.

Guest Speaker: Dr. Ted Bornhorst is Director of the A.E. Seaman Mineral Museum and Professor of Economic and Engineering Geology at Michigan Technological University in Houghton and has consulted for major and junior mining companies. He is a registered Professional Geologist in the State of Minnesota. Dr. Bornhorst earned his doctorate from the University of New Mexico. He was recently awarded the Goldich Medal for 2008 from the Institute on Lake Superior Geology for outstanding contributions to the geology of the Lake Superior region. Dr. Bornhorst has authored or co-authored over 100 publications and 100 abstracts. He has chaired 24 M.S. theses and 4 Ph.D. dissertations. He is currently the vice chair of the Mineral Wells Advisory Committee of Michigan DEQ and is an active charter member of the Northern Michigan Geologic Repository Association. He was the only academic member of the work group which drafted Michigan's 2004 nonferrous metallic mining law and subsequent administrative rules. For the Annual AIPG meeting held in Traverse City, Dr. Bornhorst provided a one day workshop titled "Exploration for and Mining of Metals with Emphasis on Michigan's Upper Peninsula."

Exploration for nonferrous metals in Michigan's western Upper Peninsula is a hot topic. Recently, Kennecott Minerals applied to and was granted approval from Michigan DEQ to open a new Ni-Cu mine, Kennecott's Eagle Project in northern Marquette County. The approval by DEQ is under review in the Michigan legal system. Aquila Resources has a NI43-101 complaint Zn-Au resource in Menominee County. Bitterroot Resources and Prime Meridian Resources continue searching for metallic mineral resources in the western Upper Peninsula. From the 1850s to mid 1990s, the Precambrian rocks of the western Upper Peninsula have yielded billions of dollars worth of nonferrous metals. Today, to develop a new nonferrous mine in Michigan a company must demonstrate that the environment and public health and welfare are adequately protected. Michigan's nonferrous metallic mining regulations are a comprehensive set of regulations designed to promote sustainable mining.

The potential for nonferrous metals in Precambrian rocks of Michigan's western Upper Peninsula will be discussed in general terms followed by an overview of developing a nonferrous mine in context of government regulations.

AIPG Section Meeting October 16, 2008

Holiday Inn South Hotel & Conference Center, Lansing, Michigan

LOCATION MAPS

