



# American Institute of Professional Geologists Michigan Section

March 2013

## From the President's Desk

The AIPG Michigan Section has a very busy year planned for our membership. Our first meeting was held on March 14<sup>th</sup> at the University Center located at Central Michigan University in Mt. Pleasant. Nick Swiger of the MDEQ provided an overview of the Michigan Department of Environmental Quality's upcoming Policy and Procedures document on Non Aqueous Phase Liquids (NAPL) management. The meeting was attended by over 80 members and students.

Mr. Swiger discussed the May 1, 2012 amendments to Part 213 that changed the way that Leaking Underground Storage Tank sites and NAPL will be addressed and managed by the MDEQ. In particular, he focused on the MDEQ's upcoming Policy and Procedures document that will be released shortly. The Policy and Procedures document focuses on NAPL management principles that include:

- A shift in focus from determining if NAPL is present to assuming NAPL is present if:
  - There was a known release of NAPL and no response action was conducted and/or
  - Subsurface contamination was detected, and/or
  - NAPL was observed at the site
- The two general states of NAPL
  - Initial expansion stage
  - Stable stage
- NAPL as a long-term source of chemicals of concern
  - "Long-term but not infinite"

In addition, Mr. Swiger discussed changes in terminology, site investigation requirements (how much data do I need?), risk assessment, NAPL recoverability, and the importance of an accurate Conceptual Site Model. A copy of his presentation was distributed to meeting attendees.

Attendees of the March 14<sup>th</sup> meeting also had an opportunity to meet Ron Wallace, 2013 National AIPG President. Ron travelled from his home state of Georgia to meet with the Michigan Section membership and Executive Committee. Ron's 15 minute presentation discussed the upcoming 50<sup>th</sup> Anniversary National meeting that will be held in Broomfield, Colorado on October 23-26<sup>th</sup>, 2013. Ron also discussed how the AIPG-Georgia Section engages their four student chapters in field trips and during an annual career day.

Going forward, our next AIPG chapter meeting will be held on May 2nd, at the Fetzer Center located at Western Michigan University. This meeting is being held at the same time as the Geological Society of America's regional meeting. Thanks to the hard work of Kevin Lund and Adam Heft, the Michigan Section is a sponsor of this event. Michigan Section attendees will be able to attend a presentation by GSA's keynote speaker Dr. William Ruddiman at no charge. Dr. Ruddiman is a paleoclimatologist and marine geologist, and a Professor Emeritus at the University of Virginia. Mr. Ruddiman is a national expert on global warming, and has written eight books and 137 papers. His presentation is titled "When did we Transform Earth's Surface?"

The 9<sup>th</sup> annual Michigan Section golf outing is scheduled for May 14th, at the Lyon Oaks golf course in Wixom. This important event is used to raise funds for the annual student awards. For more information, contact Bob Reichenbach at [bob.reichenbach@ergrp.net](mailto:bob.reichenbach@ergrp.net). Thanks Bob for continuing to coordinate this event!

This year, the Michigan Section and the Michigan Basin Geological Society are combining forces for a joint field trip. This year, the MBGS is coordinating a field trip to the Western Upper Peninsula, and will run from Thursday May 30<sup>th</sup> to Sunday June 2<sup>nd</sup>. This field trip will focus on the Precambrian Oronto Group with visits to outcrops of the Freda Sandstone, Copper Harbor Conglomerate, and the Lakeshore Trap Volcanics at Eagle River Falls. A

visit is also scheduled to the AE Seaman's Mineralogical Museum on Saturday. The cost is \$80 and is limited to 22 participants. Special thanks to Mark Wollensak, MBGS (phone 517-641-7333) for organizing this field trip.

Following the Michigan Section golf outing, our next Section event is the 3rd Annual AIPG workshop and conference. Based on the success of the last two workshops, a third day was added to the schedule. The workshop will be held from June 18-20 at the Ralph A. MacMullen Center located at Higgins Lake. This year's conference theme is titled "Power of Partnership-Owners, Consultants, and Regulators." The conference will focus on NAPL management as well as vapor intrusion, groundwater/surface water interface compliance options; in addition, the MDEQ will provide Part 201 and Part 213 regulatory updates. Kevin Lund, MDEQ ([lundk@michigan.gov](mailto:lundk@michigan.gov)) and Sara Pearson are coordinating this work shop and conference. Thank you both! Currently we are planning on approximately 200 attendees; already, approximately 75 have signed up for this event and we again expect a sell-out.

Following the 3rd Annual AIPG Michigan Section conference in June, the remaining Section events include:

- September 19, 2013, Cleary University, Howell
- December 5, 2013, Kellogg Center, East Lansing

The Executive Committee and I look forward to working with the Michigan Section membership. Don't hesitate to contact us with questions, comments, and ideas for future Section meetings or field trips. Feel free to contact me directly at [jbarkach@glec.com](mailto:jbarkach@glec.com).

John Barkach, CPG – 2013 Michigan Section President

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## Section Officers Reports

President: Information presented in the "From the President's Desk" article above.

Vice President: No report.

Treasurer: Checking Account Balance - \$38,655.65 (as of March 18, 2013);

Certificates of Deposit Summary:

Michigan Section is currently holding funds in five CDs. The value of which at maturity is expected to be approximately \$35,500

The first quarter section meeting was a great success. Approximately 80 members, non-members, and CMU students attended to hear Nick Swiger (MDEQ) present on NAPL. As part of our commitment to promoting geo-sciences in education, students in attendance were sponsored by the

section in that the section covered the cost of their meals.

Following the change in cost structure and providing value to our members, the March section meeting contributed an additional \$50 to our account balance.

Secretary:

**March 14, 2013 Executive Committee meeting minutes are as follows:**

- I. Call to Order: 4:30 PM
  - Attendees: Ron Wallace (2013 National President), Dawn Prell, John Barkach, Adam Heft, Kevin Lund, Brian Burke, Craig Savage, Sara Pearson.
  - There were no minutes from previous Executive Committee meeting presented for review/approval.
- II. Ron Wallace, 2013 AIPG National President Presentation
  - AIPG's 50th Annual Conference will be held October 23-26th, Broomfield, CO.
  - AIPG's Michigan Section will fund one additional \$1,000 Student Scholarship for a Michigan Student.
  - AIPG is looking for history on the forming and early years of the Michigan Section. This effort is being coordinated by Larry Austin.
- III. 9th Annual AIPG Michigan Section Golf Outing
  - Scheduled for Tuesday May 14th; Lyon Oaks, Oakland County, Michigan.
- IV. Financial Report
  - As of Dec 31, 2012, the values of the MI Section Checking and CD accounts are \$40,150 and \$34,650, respectively.
  - The Michigan Section's 2012 Tax Form has been completed and submitted to National as required.
- V. Upcoming Section Events
  - Next Section Meeting, May 2, 2013, WMU, Kalamazoo in conjunction with the GSA Regional Meeting.
  - Keynote Speaker will Dr. Ruddiman, paleoclimatologist and climate change expert.
  - Michigan Section is a Sponsor and will have two adjoining booths; one will be for

National (manned by Section representatives) and one will be for the Michigan Section.

- AIPG Workshop: June 18-20, 2013, Topics: LIF (18th), Part 213 (19th) and Part 201 (20th) \$125 per day for members, \$350 for all three days (early registration). Breakfast lunch and dinner are included. Internet registration is available.

#### VI. Professional Service

- Gerald E. Eddy Discovery Center, Chelsea, MI is looking for help. The Michigan Section encourages student section volunteers and may contribute funds to offset transportation costs which could benefit underfunded school districts.

#### VII. Adjourn: 5:30 PM

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### March 2013 Michigan Section Meeting

On March 14, 2013 the Michigan Section held its first Section meeting of the year at Central Michigan University in Mt. Pleasant. Approximately 80 members and non-members attended the meeting. Good participation from the CMU Student Chapter contributed to the good attendance, with about a dozen students and faculty in attendance.



Members enjoyed a social hour and dinner before the speaker's presentation while attending the March 14, 2013 meeting. Photograph courtesy of Adam Heft.

Following the buffet dinner, Ron Wallace, the 2013 National AIPG President, gave a short presentation to Michigan Section members regarding activities of the Georgia Section and how their meetings provide opportunities for students, and also to encourage members to attend the 2013 Annual Meeting that will be held in Broomfield, Colorado in October. This year's Annual Meeting will be the 50<sup>th</sup> Annual Meeting of AIPG.



Ron Wallace, 2013 National President addressing members following dinner. Photograph courtesy of Adam Heft.

Following Ron's presentation, the scheduled speaker, Nick Swiger of the MDEQ Remediation and Redevelopment Division spoke about updates on NAPL (non aqueous phase liquid) management on sites regulated under Part 213 and 201 of PA 451 as amended.



Nick Swiger of the MDEQ presenting his talk on Updates on NAPL Management. Photograph courtesy of Adam Heft.

Nick's talk provided new information released by the MDEQ within the past week; he also indicated that additional information will be forthcoming in the next few months.

Adam Heft, CPG, Michigan Section AIPG Newsletter Editor

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### Coming Events

**April, 2013:** MBGS Annual BBQ Meeting, Western Michigan University, Michigan Geological Repository for Research and Education. "The Bible, Rocks and Time: Geological Evidence for the Age of the Earth" by Ralph Stearley, Calvin College. For more information contact Tom Hoane at [HOANET@michigan.gov](mailto:HOANET@michigan.gov).

**April 15, 2013:** SPE Meeting, "Understanding Liquid Loading Will Improve Well Performance" by Robert Sutton.

**May 2, 2013:** Michigan Section AIPG Meeting, Fetzer Center, WMU, Kalamazoo. This Section meeting will be held in conjunction with the regional GSA Meeting, and the Michigan Section will be present as an exhibitor. "When Did We Transform the Earth's Surface?" by Dr. William F. Ruddiman.

Location: The Fetzer Center, WMU, Kalamazoo.

Schedule: Cash Bar and hors d'oeuvres 5:00-6:30 PM, Speaker 6:30-8:00 PM.

Cost: Free, but all participants MUST register.

**RSVP by April 29, 2013:** RSVP for the meeting on the Constant Contact website no later than April 29<sup>th</sup> at: <http://events.constantcontact.com/register/event?llr=hppwbcjab&oeidk=a07e78oyhspd8a88251>.

**May 2 and 3, 2013:** Regional GSA Meeting, Fetzer Center, WMU, Kalamazoo. Michigan Section AIPG will be an exhibitor at the meeting. Stop by and see us!

**May 14, 2013:** Michigan Section AIPG Ninth Annual Golf Outing, Lyon Oaks Golf Course, Wixom. Full information regarding the event is attached to this newsletter and is found on the Section website.

**May 30-June 2, 2013:** MBGS Field Trip. Precambrian Oronto Group, Western Upper Peninsula, Michigan. Full information regarding the event is attached to this newsletter. For details or to register, please contact Mark Wollensak at [wollensak@hampmathews.com](mailto:wollensak@hampmathews.com).

**June 5-11, 2013:** Grand Canyon Adventure: A White Water Raft Trip, sponsored by Delta College Geosciences Department and led by Dr. Tim Clarey. Space is limited; contact Dr. Clarey at (989) 686-9252 or [tclarey@delta.edu](mailto:tclarey@delta.edu).

**June 18-20, 2013:** Third annual AIPG summer workshop, Ralph A. MacMullen Center, Higgins Lake. Full meeting details are included in this newsletter and may be found at <https://events.r20.constantcontact.com/register/eventReg?oeidk=a07e71fsnz0141074d0&oseq=&c=&ch=>. For additional information, please contact Kevin Lund at [lundk@mi.gov](mailto:lundk@mi.gov).

**September 19, 2013:** Michigan Section AIPG Meeting, Cleary University, Howell. Speaker and meeting details TBD.

**October 23-26, 2013:** AIPG 50<sup>th</sup> Annual Meeting, Omni Interlocken Resort, Broomfield, Colorado. <http://www.aipg.org>.

**December 5, 2013:** Michigan Section AIPG Annual Meeting, Kellogg Center, East Lansing. Speaker and meeting details TBD.

Terry Tackett, Gina McCann, Aaron Snow, Meredith Beukelman, Laura Donker, K. Braunschneider, Zackery Remtema, Jordan Koster, Nathaniel Shuff, Karl Campbell, Chris Goeddeke, and Kyrst Olejniczak.

To each of our new members, the Michigan Section Executive Committee would like to welcome you to our Section, and encourage you to attend Section meetings and other events. You are also welcome to provide information for the Member's Corner articles.

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## 2013 Summer Conference

The annual workshop is still under development. It will be held at the Ralph A. MacMullen (RAM) Center, located on the northern shores of Higgins Lake. The workshop theme is "Power of Partnership;" mark your calendar, the workshop will be held on June 18<sup>th</sup>, 19<sup>th</sup> and 20<sup>th</sup>. Early registration for all members is set at \$350 for three days or \$125 for each day. The early registration goes up to \$450 and \$175, respectively, after April 19, 2013. Non-members will be paying \$500 early and \$600 after April 19, 2013.

The preliminary schedule for the work shop is:

On June 18<sup>th</sup> we have arranged for a full day with Randy St. Germain, of Dakota Technologies, who will cover the basic and advanced concepts of applying laser-induced fluorescence (LIF) screening tools toward characterizing LNAPL and DNAPL sites. The instructor(s) will walk you through what pulsed LIF technology is, how it is deployed, and the interpretation of the resulting data - all in a logical manner using easy to understand terminology. The instructor will walk you through a wide variety of the more complex and "exotic" phenomenon that can play a role in interpreting LIF data from LNAPL and DNAPL site characterizations - Attendees are encouraged to bring your own LIF logs should you desire to review the data in person with the instructor. An array of actual LIF field investigation data sets will be reviewed in a log-to-log and site-wide context. This highly interactive group exercise will demonstrate how a basic understanding of LIF's capabilities and limitations can be applied toward garnering insight into a site's NAPL nature and extent. This is an opportunity to gain insight not only on what LIF is telling us about the site's NAPL distribution, but Randy will also discuss what the LIF isn't capable of telling us.

On June 19<sup>th</sup>, we will start the morning with an overview of the changes to Part 213, and we have several Michigan Consultants and national experts explaining how changes in Part 213 allowed site closure, innovative strategies to site characterization and how to use NAPL transmissivity data to support

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## Welcome New Members

The Michigan Section is continuing to grow. Please welcome the following new CPGs, Professional Members, Young Professional Members, Associate Members, and Students:

site closure. In the afternoon we have a panel of owners, consultants and regulators to discuss the changes to Part 213. Topics are still being developed, but the panel will discuss how collaboration with the MDEQ discussing the technical approaches (i.e. LNAPL vapor intrusion) have or have not facilitated and accelerated UST closures. We have a networking event planned for after dinner on June 19<sup>th</sup>.

On June 20<sup>th</sup>, we will start the morning with an overview of the changes to Part 201 following a similar format as the Part 213 day. The MDEQ will present changes, once again followed by case studies by ARCADIS, CRA, AECOM and others. After the afternoon break we have set up a panel consisting of Bob Wagner, the Chief of the RRD, Grant Trigger, Michigan remediation manager at RACER, and Ravi Adibhatla, the Director - Compliance, Risk and Governance (CRG) for Consumers Energy. Topics are still being developed, but the panel may discuss how Owners, Consultants, and Regulators are working through the changes to Part 201 and finding strategies which facilitate getting to "No Further Action."

Registration for the workshop includes snacks and drinks during breaks, lunch and dinner each day, workshop materials, and the networking event on Wednesday night. Rooms are not included, but camping is available next door at the State camp ground (within walking distance) and blocks of rooms are being held at the Super 8 and Comfort Inn. Daily rates are under \$65. A shuttle service between the RAM Center and the motels will be available on the night of the Networking Event.

Sponsors are welcome, ask a vendor you are working with if they are going to the AIPG event at the RAM! This is a popular event; we already have over 80 registered; [click here](#) to register now. See you at the RAM!

Kevin Lund, Senior Geologist, CPG #10052 and Sara Pearson, Senior Geologist, CPG #10650

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## 2013 Michigan Section AIPG Summer Field Trip

The Executive Committee is looking for suggestions for the 2013 summer field trip. If you have any suggestions for a destination, please contact Sara Pearson at [pearsons@michigan.gov](mailto:pearsons@michigan.gov) or (616) 356-0253. When you make your suggestion, please include information that will help facilitate arranging the trip (i.e. trip leader, contact individual for access to the location if not public, directions, etc.).

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## Michigan Department of Environmental Quality News

### *MDEQ's Year of Implementation*

Significant changes to the State of Michigan's remediation and redevelopment programs were made in 2012. These changes allow greater flexibility in addressing sites of contamination and focusing on managing risk associated with areas. Director Wyant has said that implementation of changes to Parts 201 and 213 are the Michigan Department of Environmental Quality's (MDEQ's) priority for 2013.

Part of the implementation process is drafting policy and procedures to help provide further clarification on the statutory changes. The policy and procedures are not legally binding, but are meant to be a helpful tool to answer questions. Examples of these documents are the District Peer Review policy and procedure that helps provide an understanding of how the state reviews documents and reports, and the Vapor Intrusion Guidance Document that provides useful information regarding the vapor intrusion pathway, characterization, and management. The vapor intrusion guidance document is expected to be finalized before this summer.

MDEQ Environmental Engineer, Nick Swiger, presented the principals that will be included in the LNAPL Management policy and procedure at the recent section meeting in Mount Pleasant on March 14, 2013. This document is expected to be completed soon and will be advertised on the MDEQ's Listserver as being available for comment by stakeholders. Once comments are received, reviewed, and incorporated where appropriate, the policy and procedure will be finalized and may be used as reference material.

Additional policies and procedures are also being drafted for the groundwater/surface water interface and incremental sampling process. Expect to see Listserver announcements for these documents in the upcoming months as well. The MDEQ welcomes your input on these documents as part of the collaborative process in implementing the newly amended remediation and redevelopment programs.

Sara Pearson, Senior Geologist, CPG #10650

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## 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.

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## 2013 Golf Outing

It is not too early to begin planning for our Ninth Annual AIPG Golf Outing. We hope to continue to add to our numbers of golfers and sponsors this year. To do this, we are asking for your help. Please make a point to do your best to spread the word and participate in this event which takes place on Tuesday, May 14, 2013 at the Arthur Hills designed Lyon Oaks Golf Course in Wixom, MI. Also, please pass this information along to your service providers/subcontractors/suppliers. This event offers excellent exposure for companies that support and serve our profession.

This event has become a great opportunity to spend time with clients, network with colleagues, and celebrate the return of warm weather to Michigan. This event is open to everybody, so please come and take advantage of the opportunity.

The money raised is put toward the Michigan Section's K-12 educational grant recipients. To insure continued success, please assist us by participating, sponsoring, soliciting sponsors, and/or donating prizes or items. Call Bob Reichenbach at 734-476-5933 or Kevin Lund at 888-417-4440 to register or to offer your time to assist with the event.

The registration and sponsorship form is included in this newsletter and has been posted to the Michigan Section's website <http://mi.aipg.org/>. Click on "Golf Outing." Forms can be faxed to (888) 417-4440. We hope to see you May 14.

Bob Reichenbach and Kevin Lund, Golf Outing Co Chairs

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## Newsletter Notice via E-mail

Please be sure that you continue to receive the Section newsletters and other announcements. Submit an updated e-mail address to Adam Heft at [heft@pbworld.com](mailto:heft@pbworld.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. If you are not receiving announcements directly from the Editor, it is because your email address is not up to date.

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## Section Website Reminders

As you may have noticed, the Michigan Section is working on building a database of geologic photographs on our website. We would like to continue building this collection. Please submit photographs that you are willing to share to Adam Heft at [heft@pbworld.com](mailto:heft@pbworld.com). Don't forget to include your name and a short explanation of what the photograph depicts. The photographs will be periodically uploaded to the website once several have been received.

You will also note that the Section website now has a history page. Currently, it includes information on Douglas Houghton, Michigan's first State Geologist. We will be including information on the Section's officers in the near future. If you have suggestions on other items that should be included on this page, please let a member of the Section Executive Committee know.

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## Member's Corner

*The Member's Corner includes information about the Section's membership. This is your chance to provide information on where you are and what you are doing. Simply send the information to the Editor for inclusion in this section.*

No Member's Corner Articles were submitted for this edition of the newsletter.

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## Employment Opportunities/Seeking Employment/Member Opportunities

*To serve our members, and provide added value, the Michigan Section Executive Committee has decided to allow ads for employment or other opportunities to be posted in the Section newsletters. Employment ads will run for one edition unless renewed. There is no cost to our members or sponsors for this service. Send your employment opportunities to the Editor.*

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# 9th Annual AIPG Michigan Section Golf Outing Tuesday May 14, 2013

## Sponsor Information

### **Exclusive Dinner Sponsor- \$1,300**

#### **Investment includes:**

- 1 foursome
- Signage at club house and lunch area
- Corporate recognition\*

### **Beverage Cart/Oasis Sponsors - \$600 (2)**

#### **Investment includes:**

- Signage at the club house and on the Beverage Cart.
- Corporate recognition\*

### **Luncheon Sponsors - \$600 (2)**

#### **Investment includes:**

- Signage at the grill.
- Corporate recognition\*

### **Hole-in-one Sponsors - \$400 (4)**

Will have visible exposure on ALL Par 3 Holes.

If a golfer hits a hole-in-one, the prize will be, either \$10,000, a golf vacation or a deluxe set of irons.

### **Tee Sponsor - \$200**

**(18) Available**

#### **Investment includes:**

- Tee box signage
- Corporate recognition\*

### **Skill Sponsors – \$375**

#### **Investment includes:**

**(6) Available**

"Longest Drive" "Closest to Pin" awards to Male/female for each.

Putting contest for \$\$, Signage on the hole or putting area, corporate\* recognition during the event (includes contest coordination [at the turn](#)).

### **Goodie Bag Sponsor - \$100 plus 144 goodie bag items**

\*Dinner and Beverage Cart/Oasis Sponsors will receive AIPG membership. All sponsors will be recognized in the Quarterly News letter and on the Michigan Section Web Site.

**This event is our annual Fund Raiser. The Michigan Section of AIPG Golf fundraiser benefits the Michigan Section's ability to support K-12 education grants and scholarships.**

**Place: Lyon Oaks Golf Course**

**Event: 18-hole Scramble**

**Date: May 14, 2013 Tuesday**

**Registration: 8:00 to 9:30 AM**

**Tee Time: 9:30 AM**

*Rainout Date: May 16, 2013 (based on course availability).*

Includes: Continental Breakfast, green fees, cart, range balls, Lunch on the course, networking opportunities, and DINNER.

Also includes prizes for winners, 50-50 and Grand Prize raffles along with other prizes, inc., "\$10,000 Hole in One" Trips, Putt for \$2,500, men's and women's longest Drive and Closest to pin contests, \$20 gas cards to the four golfers traveling the furthest and goodie bag for all golfers.

**Golfer Sign-up Due:**  
**May 3, 2013**

## Registration

Individual = \$150 Team = \$520 (4 players)

Player One: \_\_\_\_\_

Player Two: \_\_\_\_\_

Player Three: \_\_\_\_\_

Player Four: \_\_\_\_\_

**Contact Name, Company and Phone Number for your Foursome:**

**Accepted forms of payment include:**



or



or



### **Make Checks to:**

**Michigan Section-AIPG  
C/O ERG, LLC  
PO Box 1172  
Union Lake, Michigan 48387-1172**

### **Contact:**

Kevin Lund [klund@g-eri.com](mailto:klund@g-eri.com)

Bob Reichenbach [bob.reichenbach@ergrp.net](mailto:bob.reichenbach@ergrp.net)

CALL or FAX to reserve your place!

**888-417-4440**

The AIPG-MI Section is a nonprofit 501(c)(6) Organization

# 9th Annual AIPG Michigan Section Golf Outing

## Tuesday May 14, 2013



Arthur Hills-designed  
18-hole course on 230  
acres

- "Up North" feel in southwest Oakland County
- Par-72 championship golf course
- Hardwood forests and wetlands enhance natural golfing experience

- "Nature, Of Course!" interpretive signs along cart paths point out natural features of interest or significance
- Wide fairways enhance playability
- Wetlands and ponds increase challenge of play
- Sand bunkers and freshwater lakes provide a strategic challenge for accomplished golfers
- Multiple tees on every hole make the course playable and enjoyable by all level players
- State of the art practice facility with target greens and sand traps
- Picturesque clubhouse with expansive views of the course accommodates parties of up to 450 for wedding receptions, banquets and educational meetings
- [Lyon Oaks County Park](#)'s day-use area features a 13-acre Dog Park and 2.5 miles of hiking trails
- Day-use park area also includes a picnic shelter, playground and recreational fields
- Trail head and parking for Lake Community Trail

### Accolades

- Included in The Oakland Press' "Ten to Try This Summer" listing of Oakland County Public Golf Courses
- Member of *Arthur Hills Golf Trail*, featuring acclaimed Art Hills courses throughout the state
- Garnered a 4.5 star rating by *Golf Digest* and named the #2 course in Detroit to play

in ESPN's *Sports Travel Golf Course Guide* of the Best Places to Play

- Named #4 in Jeff Lesson's Top 10 Public Golf Courses in southeast Michigan. (Lesson hosts "Lesson on Golf" on WXYT and WWJ radio stations)
- Named in Detroit Free Press *Top 10 Public Courses*

Yardage	GAM Ratings
Black - 6837	Men's Black Tee - 72.7, Slope 137
Blue - 6427	Men's Blue Tee - 70.7, Slope 133
White - 6133	Men's White Tee - 69.3, Slope 131
Gold - 5389	Men's Gold Tee - 65.6, Slope 115
Green - 4525	Women's White Tee - 75.5, Slope 145
	Women's Gold Tee - 70.8, Slope 131
	Women's Green Tee - 66.7, Slope 112



**Michigan Chapter  
American Institute of Professional Geologists  
MEETING ANNOUNCEMENT  
Held In Cooperation with the Regional GSA Meeting**

**May 2, 2013**

**WHEN DID WE TRANSFORM EARTH'S SURFACE?**

Featured Speaker – GSA Regional Meeting Keynote Address:

[Dr. William F. Ruddiman](#)

**Location:** Fetzer Center, Western Michigan University, Kalamazoo, MI (Map attached)

**Cost:** Free, but all participants **MUST** register by the deadline. **Registration is via constant contact (see link below).**

**Dinner:** Hors d'oeuvres only.

**Time:** Cash Bar and hors d'oeuvres 5:00-6:30 PM, and Speaker 6:30-8:00 PM

**RSVP:** On the Constant Contact website no later than April 29<sup>th</sup> at:  
<http://events.constantcontact.com/register/event?llr=hppwbcjab&oeidk=a07e78oyhspd8a88251>.

\*Dr. William F. Ruddiman is a palaeoclimatologist and Professor Emeritus at the University of Virginia. Ruddiman earned an undergraduate degree in geology in 1964 at Williams College, and a Ph.D. in marine geology from Columbia University in 1969. Ruddiman worked at the US Naval Oceanographic Office from 1969 to 1976, and at Columbia's Lamont-Doherty Earth Observatory from 1976 to 1991. He moved to Virginia in 1991, serving as a Professor in Environmental Sciences. Ruddiman's research interests center on climate change over several time scales. He is a Fellow of both the Geological Society of America and the American Geophysical Union. Ruddiman has participated in 15 oceanographic cruises, and was co-chief of two deep-sea drilling cruises.

Ruddiman is best known for his "early anthropocene" hypothesis, the idea that human-induced changes in greenhouse gases did not begin in the eighteenth century with advent of coal-burning factories and power plants of the industrial era but date back to 8,000 years ago, triggered by the intense farming activities of our early agrarian ancestors. It was at that time that atmospheric greenhouse gas concentrations stopped following the periodic pattern of rises and falls that had accurately characterized their past long-term behavior, a pattern which is well explained by natural variations in the Earth's orbit known as Milankovitch cycles. In his overdue-glaciation hypothesis Ruddiman claims that an incipient ice age would probably have begun several thousand years ago, but the arrival of that scheduled ice age was forestalled by the activities of early farmers. The overdue-glaciation hypothesis has been challenged on the grounds that alternative explanations are sufficient to account for the current warm anomaly without recourse to human activity, but Ruddiman challenges the methodology of his critics.

Ruddiman is also known for his hypothesis in the 1980s that the tectonic uplift of Tibet created the highly seasonal monsoonal circulation that dominates Asia today. With his then graduate student Maureen Raymo he hypothesized that the uplift of the Himalayas and Tibetan Plateau caused a reduction in atmospheric CO<sub>2</sub> through increases in chemical weathering and was therefore a major causal factor in the Cenozoic Cooling trend that eventually led to our most recent series of Ice Ages.

*\*Editor's Note: speaker bio obtained from Wikipedia*

# AIPG Section Meeting May 2, 2013

## Fetzer Center, Western Michigan University, Kalamazoo



## WESTERN MICHIGAN UNIVERSITY CAMPUS

