

# Association of Environmental and Engineering Geologists

The Rocky Mountain Section Newsletter

APRIL 2008

## MEETING DATE

**THURSDAY**  
**APRIL 10th, 2008**

## TIME

5:45 p.m. Social Hour  
6:30 p.m. Dinner  
7:30 p.m. Presentation

## LOCATION

**Berthoud Hall,**  
**Colorado School of**  
**Mines**  
**1516 Illinois St.**  
**Golden, Co 80401**  
**See Map Below**

## COST

**\$25 Members**  
**\$27 Non-members**  
**Students, free first**  
**time then \$10**

## RESERVATIONS

Kristi Ainslie  
(303) 440-5236  
or  
[meetings@aeqrms.org](mailto:meetings@aeqrms.org)  
or  
[WWW.AEGRMS.ORG](http://WWW.AEGRMS.ORG)

**BY NOON,**  
**TUESDAY**  
**April 8<sup>TH</sup>**

## **FROM DRILLING UPSIDE-DOWN TO RAISING THE ROOF THE BC NORTH LINE TUNNEL CLEARANCE IMPROVEMENT PROJECT**

Scott R. Walker  
Shannon & Wilson, Inc.

The Canadian National Railway Company (CN) operates the BC North Line across north-central British Columbia. This rail corridor is the key transportation link between the new Fairview Container Terminal at the Port of Prince Rupert and the rest of North America. In order to accommodate double-stack container cars, vertical clearance improvements were required in six of the twelve tunnels along the route. Shannon & Wilson worked with CN to determine the locations and magnitudes of the obstructions and to develop a design to provide the required clearance.

During initial field reconnaissance, apparent structural distress and deformation of the concrete lining were observed at several locations in one of the tunnels on the Bulkley Subdivision between Smithers and New Hazelton, BC. To evaluate subsurface conditions around the tunnel perimeter, twenty test borings were drilled from inside the tunnel. Fifteen of the borings were drilled at unconventional orientations, both horizontally at the springline and vertically up through the crown. The drilling program was completed under live-track conditions and utilized soil coring to collect samples of the dense glacial sediments (primarily glacial till and glaciolacustrine deposits). The unusual boring orientations, restricted working space inside the tunnel, and short work windows between trains required that the drilling contractor develop creative techniques and adapt quickly to unforeseen challenges.

To achieve the required clearance dimensions while preserving the structural integrity of the tunnels, our design included a combination of contact grouting, concrete portal caps, and roadheader-excavated notches supported by soil nails and rock bolts. The rail line could not be taken out of service during construction, and the completion schedule was very aggressive. Starting in mid-July, clearance work was completed about one week before the first container ship docked in Prince Rupert in late October. So far, no container trains have gotten stuck in the tunnels.

## Words From the Chair

What an awesome Student Night! We had 4 wonderful posters covering a variety of subjects ranging from the update of CRSP to watershed issues in the Black Hills. A big thanks goes out to all of our generous sponsors. I am always amazed at the generosity of our Section members and area businesses. Your generous donations will enable the Section to continue our tradition of providing free meals to first time student attendees and reduced cost dinners thereafter. A special thanks goes out to the crew from South Dakota School of Mines and Technology for making the trek down to Denver for the evening. And also to the 17 CSM students who attended the evening's festivities.



Each of the student presenters received a copy of Messages in Stone signed and personalized by Colorado State Geologist Vince Matthews, a copy of the AGI's Geosciences Handbook, and a reference book of their choosing. The poster judged best of the night was by none other than Student Section Chairperson Diana Cook. Her project titled, "Field-Scale Measurement of Water Table Profiles in a Drained Slope" earned Diana the coveted GeoBrunton for 2008. Congratulations Diana!! And finally thanks to Susan, Bob, Bill, Peggy and Dr. Noe for judging the event. We couldn't have done it without you!

Scheduled to present at the April meeting is Scott Walker with Shannon and Wilson. Scott will be discussing a recent tunneling project that he worked on titled, "**From Drilling Upside-Down to Raising the Roof -- The BC North Line Tunnel Clearance Improvement Project**". I got a little sneak peak of his talk at Student Night and it should be very interesting. I hope you can all join us for the short turn around meeting.

I hope to see you all back on our normal night and location Thursday April ,10th. Don't forget to RSVP by Tuesday (4/8/08) at noon.

Steve Compton, PG  
Chair AEG-RMS

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## 2007-2008 Upcoming Meeting Presentations

We still need a presenter for the May 8, 2008 meeting please contact Steve Compton at [chair@agrms.org](mailto:chair@agrms.org) if you are interested.

If you would like to present during the 2008-2009 season, contact Steve Compton at [chair@agrms.org](mailto:chair@agrms.org) and he will get you on the schedule.

## Michael W. West and Associates Job Position

Michael W. West & Associates, Inc. is looking for geotechnical/geological engineers or geologists for our office in Denver (Englewood), Colorado. Michael W. West & Associates are consulting engineers and geologists providing a broad range of professional consulting services in the applied earth sciences. Competitive salary and benefits. Please email resume and references to: [jcoleman@m-west-assoc.com](mailto:jcoleman@m-west-assoc.com) or call Frank Harrison or Pete Stauffer at 720-529-5300.

## International Year of Planet Earth

**First-ever**

**joint**

**meeting,**

**October 5-9,**

**2008**

More than 10,000 scientists, professionals, and students will gather in Houston on 5-9 October 2008 to discuss the latest research and current trends in energy, water resources, science education, earth systems, and related sciences.

This meeting is sponsored by the Geological Society of America, American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, and Gulf Coast Association of Geological Societies. Also participating is the Gulf Coast Section of the Society for Sedimentary Geology and the meeting is hosted by the Houston Geological Society.

The intention of this first-ever joint meeting is to highlight and stimulate discussions in areas of common interest across the diversity of disciplines of the organizations represented. Held under the theme, "Celebrating the International Year of Planet Earth," the meeting recognizes the International Year of Planet Earth initiative, organized by International Union of Geological Sciences and the United Nations General Assembly.

The event will be held at the George R. Brown Convention Center and will feature presentations of scientific papers, hundreds of exhibits, and a myriad of distinguished lectures and special events that will engage students to professionals to scientists across the earth sciences and in every employment sector.

The scientific program features joint scientific sessions in the following topical categories:

- \*Climate Change through Time: Evidence in the Geologic Record
- \*The Impending Global Water Crisis: Geology, Soils, Agronomy, and International Security
- \*Energy Budgets and the Global Market
- \*Globalization of Biogeochemical Cycles
- \*Wetland and River Restoration: Environmental Saviors or Scientific Failures?

**Continued on page 5...**

# International Year of Planet Earth

## Con't from page 4

- \*Coastal Impacts: Can Massive Environmental Restoration and Coastal Engineering Protect the Gulf Coast from Future Hurricane Impacts and Rising Sea Levels?
- \*Geobiology and Biomineralization: From the Origins of Life to the Origin of Cities
- \*Emerging Trace Contaminants in Surface and Ground Water Generated from Waste Water and Solid Waste Application
- \*Carbon Sequestration: Methods, Markets, and Policy
- \*Human Influences on the Stratigraphic Record

In addition to the joint sessions, each participating scientific society will have its own sessions, symposia, workshops, field trips, tours, and special events.

Representatives of the media are cordially invited to attend and participate in scientific sessions, field trips, and other special events. Eligible media will receive complimentary registration and are invited to use onsite newsroom facilities while at the meeting.

Eligibility for media registration is as follows:

- \* Working press representing bona fide, recognized news media with a press card, letter, or business card from the publication.
- \* Freelance science writers, presenting a current membership card from NASW, ISWA, regional affiliates of NASW, ISWA, CSWA, ACS, ABSW, EUSJA, or evidence of work pertaining to science published in 2007 or 2008.
- \* PIOs of scientific societies, educational institutions, and government agencies.

Representatives of the business side of news media, publishing houses, and for-profit corporations must register at the main registration desk and pay the appropriate fees.

Journalists and PIOs must pay for any short courses or field trips in which they wish to participate.

Media registration will begin in June 2008. Contact Ann Cairns, GSA Director of Communications/Marketing/Sales, or Sara Uttech, ASA-CSSA-SSSA Communications Program Manager, for additional information or assistance.

What: Joint Annual Meeting of the Geological Society of America, Soil Science Society of America, American Society of Agronomy, Crop Science Society of America, and the Gulf Coast Association of Geological Societies with the Gulf Coast Section of SEPM, hosted by the Houston Geological Society

When: 5-9 October 2008

Where: George R. Brown Convention Center, Houston, TX, USA

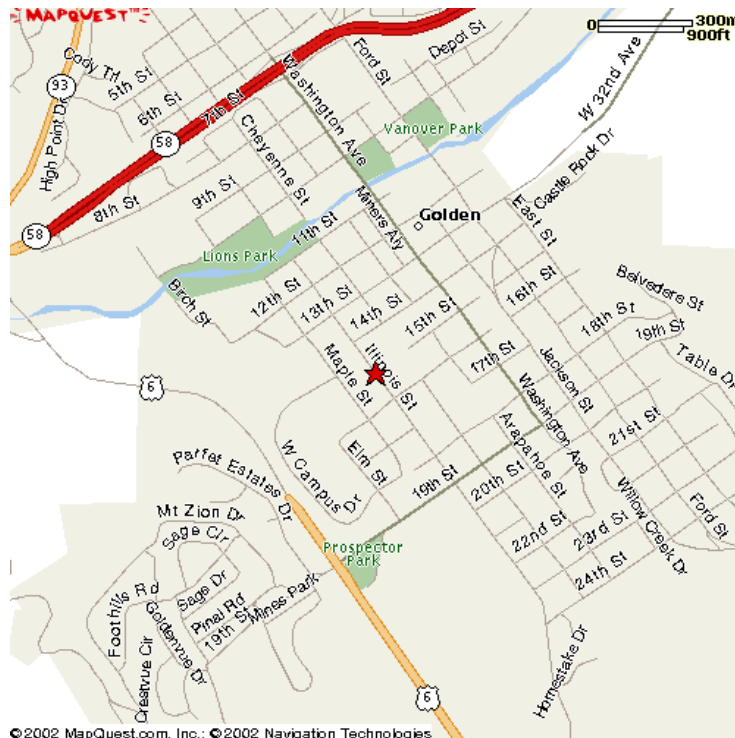
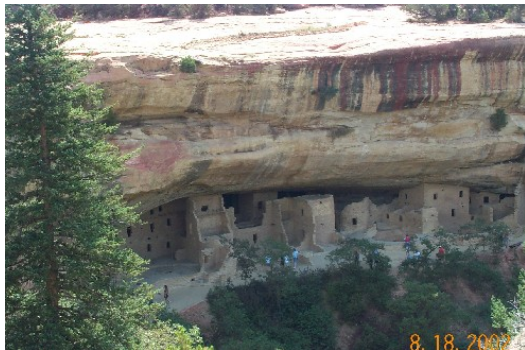
For information about the meeting or sponsoring scientific societies, go to:

<https://www.acsmeetings.org>

<http://www.geosociety.org>

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GEI Consultants, Inc.  
Attn: Kristi Ainslie  
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Boulder, CO 80301



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